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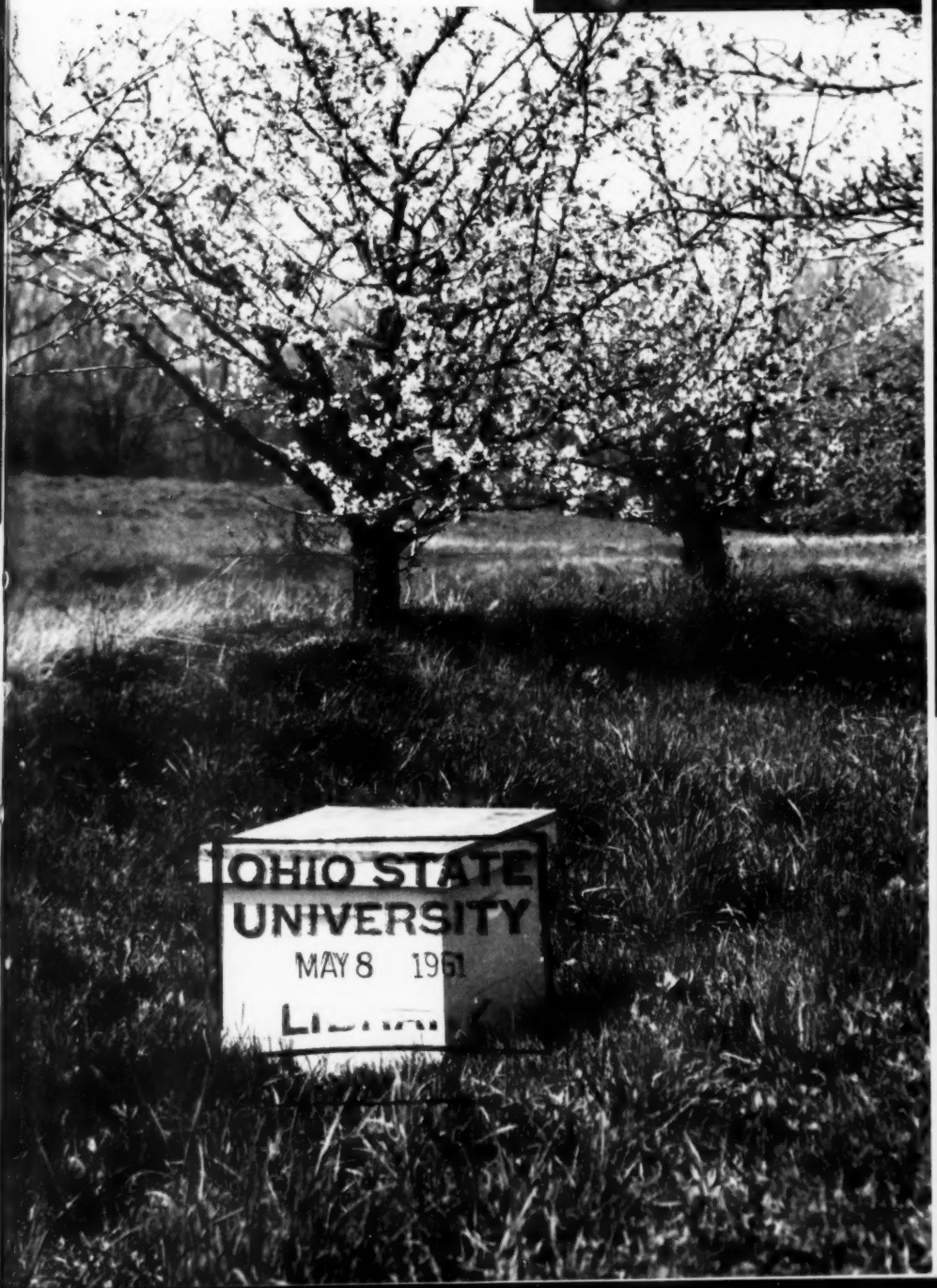

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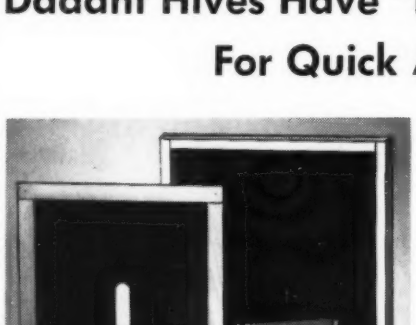

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Gleanings in Bee Culture

May, 1961 CONTENTS Vol. 89, No. 5
88 Years Continuous Publication by the Same Organization

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COVER PICTURE — C. B. Hamilton of Fenton, Michigan, is credited with installing a package of bees on April 18, and procuring 577 finished sections of comb honey from that colony the same season. This happened some years back, during an exceptional year no doubt, but it goes to prove that with good management, the hive pictured on our cover this month, which was started with a three-pound package of bees, can make a surplus crop of honey this year.

Of course, we cannot overlook the service this colony of bees is rendering in cross pollinating the cherry blossoms. — An orchard without at least one hive of bees, is like a tree without its leaves.

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JACK HAPP

Dear Editor:

The articles about Argentine Rape have been very interesting. Perhaps my experience will be helpful to those who try it in Ohio.

We bought seed from Brett Young in Canada but did not plant it till June 20th and made the mistake of planting in a field heavily limed for clover. As a result of the lime a lot of the rape died out. This was proven by test rows in the garden. The rape planted with lime in the rows died out while the rape without any additional lime grew shoulder high, branched out and produced countless blooms during the cool moist weather.

The field started to bloom in about 60 days and continued all through August but due to the hot, dry weather did not produce nectar although we did get some seed in late fall.

The test plot planted July 20th started to bloom September 1st and was still blooming in November when a couple of hard freezes almost finished it. But regardless of frosty mornings the bees worked the bloom every day except during rains and many days continued working till dark.

This time we plan to plant the seed as early as the ground can be worked which will give us bloom in May and on into June if the weather is right. Then make a second planting about July 20th and perhaps another August 1st. This will give us a fall bloom from September 1st till the plants are killed by freezing in November. And the grown plants will stand a lot of hard freezes before the nectar will stop flowing.

Planted to bloom during cool, moist weather we believe Argentine Rape cannot be beaten as a honey producer in Ohio.—J.E.M., Ohio.

Dear Editor:

I have kept bees for a number of years in lower Michigan and have always read Gleanings, but I have never read as much constructive bee-know-how as you have printed in the past three months.

The three brood chambers, the two-queen system, the Argentine rape for a honey source can well make a big beekeeper out of a little one. — R. J. C., Mich.

Dear Editor:

How about giving us Mrs. Partello's rye bread recipe? I feel that we need to encourage the housewives to use more honey in their baking. — E. P. B., North Carolina.

Editors' Note: Mrs. Partello's recipe for rye bread appears in this issue on page 290.

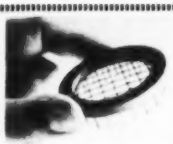
Dear Editor:

The article on honey research by R. B. Willson in your April issue is one of the best pieces to appear in a bee magazine in the past five years.

I would say that we need not only research with a purpose on honey but also on bees and honey plants. In altogether too many areas, honey flows are beginning to be a thing of the past and our knowledge of the bees themselves does not nearly equal the scientific studies made with corn and poultry.—R.M.M., Vt.

Dear Editor:

"What's needed in Honey Research" was a fine article and I think that if he had cited the reference in Isaiah 7:15, he would have made a much stronger case. "Butter and Honey shall he eat, that he may know to refuse the evil, and choose the good."—R.L.M., Fla.



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As in the past we will be shipping **PACKAGE BEES** as of April 1st. Are you listed for shipment? Many dates are filled to capacity now (March 6th). Give us a try if you still need bees. We are sorry if we could not accept your queen order. Packages require so many queens that we have to limit shipment of individual queens until after May 10th. Give us your order for queens to be shipped after that time. If at all possible we will supply you. Refer to last issue of journals for package prices. Queen prices as follows:

	Regular Italian	
	to May 20th	after 5/20
1-24	$1.45 ea.	$1.20 ea.
25-99	1.35	1.10
100 up	1.25	1.00
	Island Hybrid	
	to May 20th	after 5/20
1-24	$1.75 ea.	$1.50 ea.
25-99	1.65	1.40
100 up	1.55	1.30

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Monthly HONEY Report

WALTER BARTH
Field Editor
San Antonio, Texas

MOST REPORTS received here indicate that bees are generally wintering well. There are exceptions such as in New Jersey where some heavy losses are expected. In contrast, neighboring New York reports that bees are wintering unusually well. There is even a report of bees in this area with five frames of brood in early March. Possibly this condition is too good, for such colonies are liable to reach their peak too early or cause swarming headaches. Of course, brood can be taken away and given to weak colonies or nucs can be started. However, in an area where bees are wintering well there aren't too many weak colonies so that early strong colonies can be troublesome.

While bees are wintering well, honey is not doing as good. Price cutting is more noticeable and is spreading rapidly. A Detroit beekeeper recently wrote to inquire about the source of my honey prices because they were too high. Price cutting is reported to be bad in Michigan and in the New York City area.

Honey Price Support Hiked

While honey prices may be cut in some areas, honey price support rates have gone up 30 percent. Secretary of Agriculture Freeman announced that the honey price support was put at 11.2 cents a pound as compared with 8.6 cents last year.

Morocco to Buy Cuban Honey

Cuba is finding it difficult to locate markets for its honey as well as sugar. Occasionally international honey deals are set up like the current one between Cuba and Morocco. Here is a twenty million dollar deal in which honey is reported to play a big role. Cuba will ship honey, sugar, and other items, for phosphates, tractors, trucks and sardines.

Honey Candy Brings Big Response

During the tenure of this column there never has been such a reader response as the reaction to my comments on honey candy. The request for honey candy recipes along the ideas mentioned in this column in March kept my typewriter humming. Kindly send future recipe requests to the American Honey Institute, Commercial State Bank Building, Madison 3, Wisconsin. If you are interested in getting some fine honey candies please contact Andre Prost, Inc., 100-11 Astoria Boulevard, East Elmhurst 69, N. Y. or Meineke's Honey Farm, Route 1, Palatine, Illinois. Kindly do not send any more requests to my attention as all of the necessary information is given here.

Beeswax Market

The beeswax market has been rather dull during the last four weeks. According to reports being received here beeswax prices quoted to beekeepers have been 40 cents in some areas although 42 cents a pound still seems to be the more common price.

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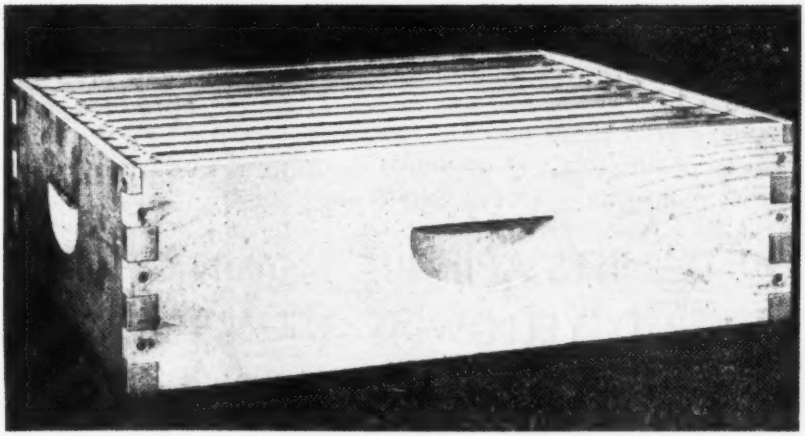

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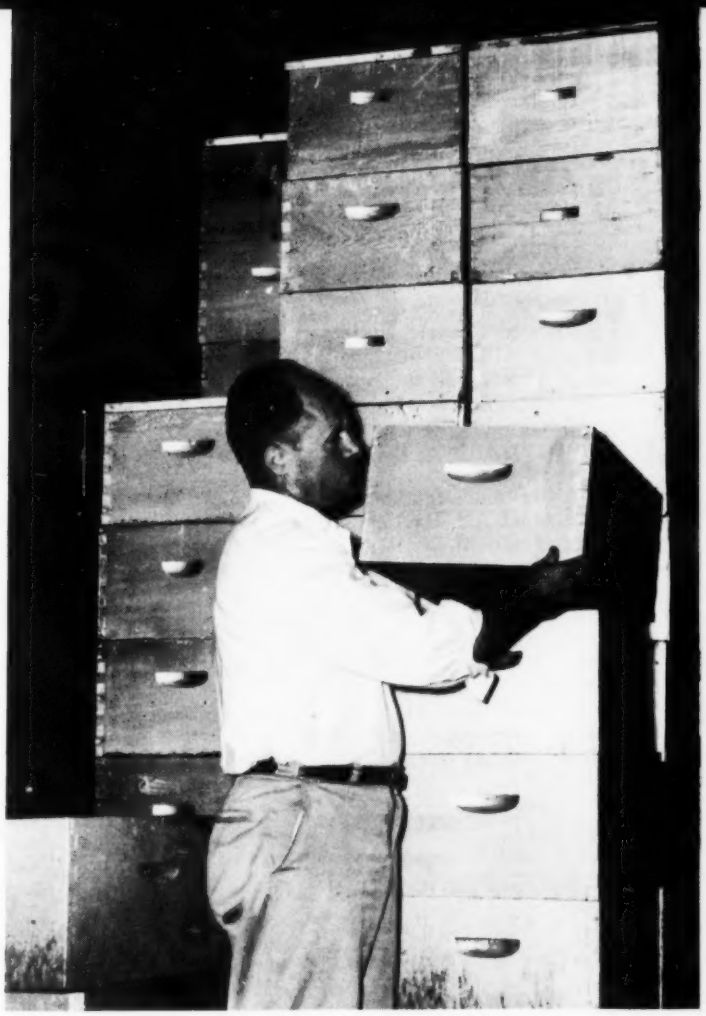


Charles Hignite examines some of his hive bodies that take a beating from the Gulf Coast climate. He treats all of his outside equipment with a wood preservative in order to get maximum usage.

Beekeeping on the Gulf Coast

A. B. KENNERLY
College Station, Texas

Have you ever wondered if keeping bees on the side could develop into a profitable business? If you are not afraid of a little work, then this could happen to you!

FIFTEEN YEARS of beekeeping have convinced Charles Hignite of one thing: It takes good queens if you're going to remain in the bee business year after year. That's why he has developed his own line of queens. And that's how he got into the queen rearing business.

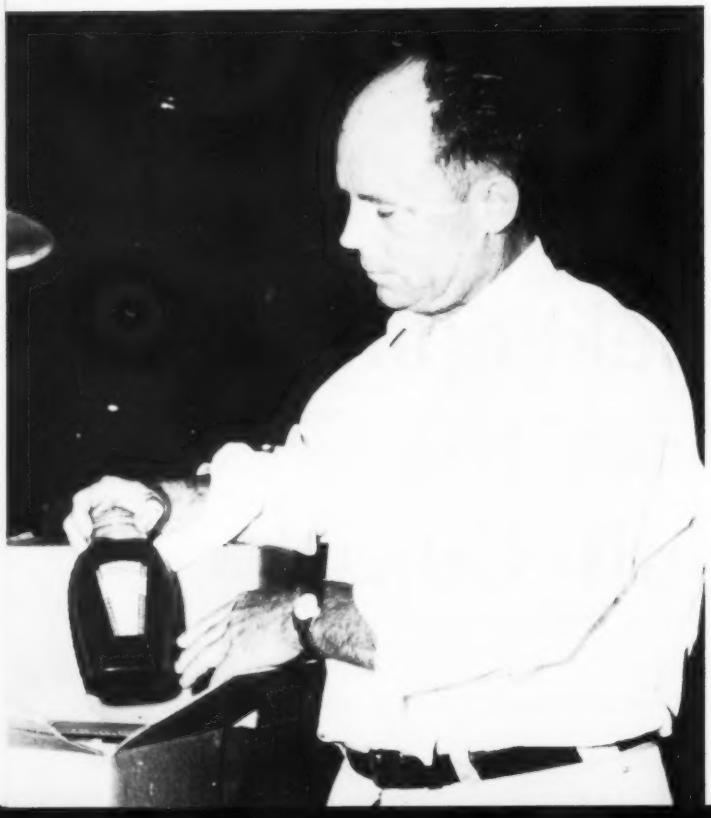
Hignite tends about 1,200 colonies of bees around Baytown, Texas, near Houston and in the middle of the fabulous chemical industry along the Gulf Coast of East Texas. There's a natural market for honey in this section, and Hignite sells about 50,000 pounds of honey in bottles to supply the local demand.

"I bottle and sell only the highest quality of honey I can produce," Hignite points out. "That policy has built up a brisk demand for my honey, and food stores are eager to keep large supplies on their shelves."

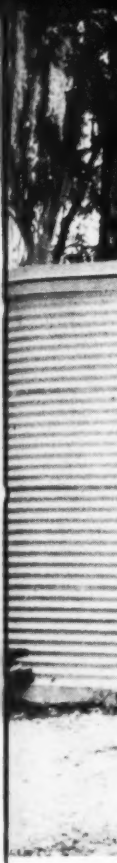
There was a time when Hignite would hit the road calling on stores to move his stock of honey. Times have changed and with these changes, Hignite has changed his method. He now bottles only enough to supply stores with honey their customers prefer.

"One of my chief objectives now is to increase production of honey in each colony," Hignite explains.

He wants the largest Italian queens he can raise — queens that are gentle but whose progeny will bring in huge stores of honey. His best colonies have stored a surplus of as much as 360 pounds. This is far above his present average, but it sets a good target at



Hignite shows the size bottle that is his best seller on the present market, the 2-pound jar. It was formerly the 1-pound jar that most of his customers wanted.



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Hignite likes the quonset hut type of building. It is cooler in summer and does a better job of protecting his supplies.

which he aims. Then he wants queens that lay a good brood pattern. From these best colonies, he selects young larvae of the proper age for grafting. To insure the strongest and healthiest queens, he feeds honey to the nurse bees. He grafts from 200 to 300 cells at a time, then transfers to nuclei or queen mating hives about two days before the queens hatch. Here they mate, then are caught and put in mailing cages and placed above a screen over a strong colony. They remain here for two or three days until a sufficient number are accumulated to fill orders. Each nucleus turns out a queen every 20 days.

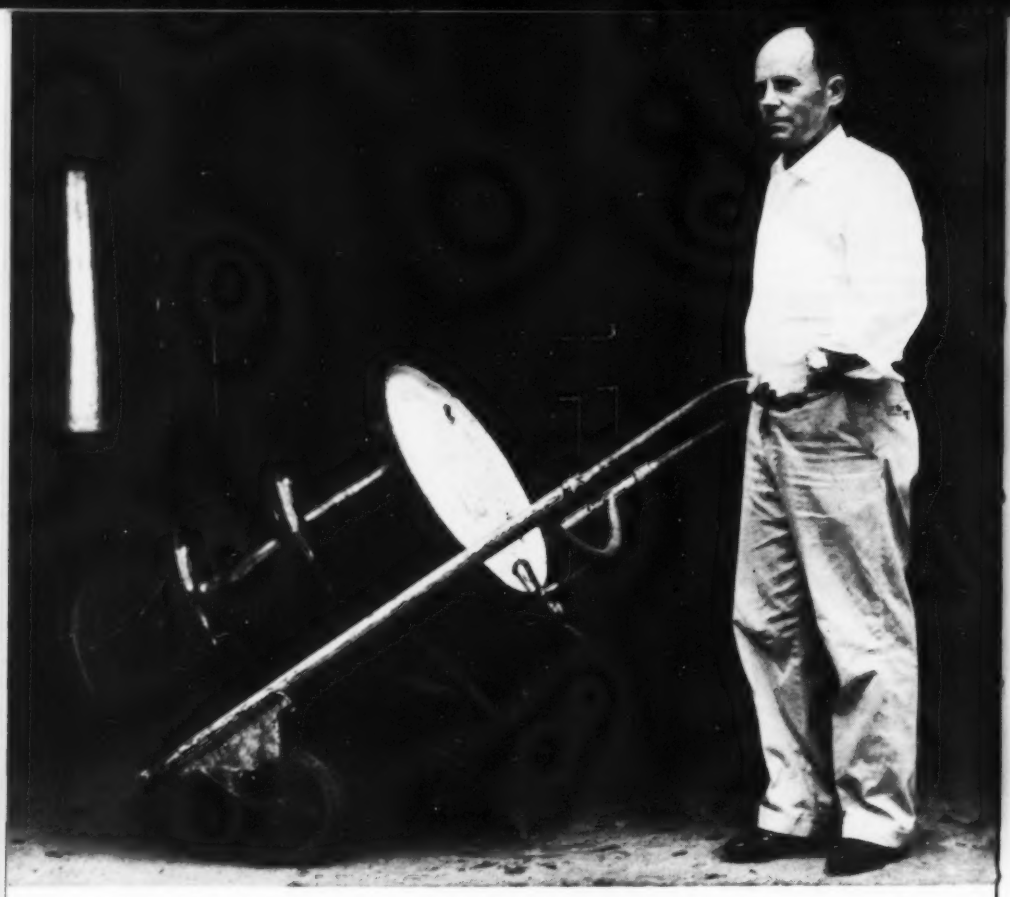
Hignite keeps his colonies as near his home as possible. This advantage was made possible by a fortunate development in clover production in nearby Chambers County. County Agent J. R. Carroll has been urging large rice growers to include in their rice-pasture rotation the new S-1 white clover, a close relative of the old stand-by, White Dutch clover. The clover makes a heavy growth of forage and many thousands of acres of the new legume have been planted.

"I have bees on about 3,000 acres of this clover," Hignite reveals. "It gives a flow of honey for four to eight weeks, making a surplus of about 60 pounds. I place one colony to four or five acres, but I believe I could run one colony to the acre."

Another clover he finds to be a good honey producer, comparing favorably with Hubam clover, is Persian clover. It makes a light honey similar to cotton honey.

Populous Colonies Necessary for Maximum Production

He has learned many practices that increase his honey production. "And I've a lot to learn yet", he concedes. "I have found the top strength the colonies must have to bring in those heavy yields of honey from clover. Weak



About 500,000 pounds of honey are shipped by steamship to the New York market. This two-wheeled truck makes it much easier to move the barrels.

colonies take too long to build up the field forces. Colonies that are 'right' have no trouble bringing in a good surplus."

Hignite works closely with other agricultural agencies, such as the Soil Conservation Service, spotting choice locations where farmers are planting large acreages to soil-building clovers. He is especially interested in singling out those who are growing seed. He finds that bees increase production of seed from seven to ten times. But he makes no charge for pollination services. He figures the honey he gets from the fields to be a good return for the pollination services the bees provide the seed producers. On these fields, he tries to balance out numbers of colonies to give the most pollination, yet obtain a minimum of 60 pounds of surplus honey.

Hignite also operates as a honey broker, buying honey from all parts of Texas, and sometimes from Arkansas and Louisiana. Much of his honey comes from south and west of San Antonio. He blends the honey and ships it to buyers in New York who sell it to the baker and confectionary trade. He ships about 500,000 pounds of commercial grade honey in barrels. He is located near docks where steamships transport much of his honey to market.

"I've had all of the experiences that go with beekeeping," he insists. He shows a picture taken when his big truck skidded, jack-knifed and turned over on a street in Bay City. "No one has become a full-fledged beekeeper until he has witnessed the mess and 'goo' of his own bees and honey spread over the pavement of a highway," he observes.

On the marketing end of the business, he has seen his market temporarily crushed by the impact of heavy ship-

(Continued on page 317)

A Beekeeping Police Sergeant

Do you think this man's bees are troubled by robbers?

J. G. POPE
Birmingham, Alabama

BIRMINGHAM POLICE switchboard received the call that made a hobby beekeeper of me on Labor Day, 1956. I had been on the force about 11 years and was working as patrol sergeant on the afternoon shift when a citizen called complaining that there was a large cluster of bees on a store front window at Third Alley on 18 Street North, which is near the center of our business district downtown.

Now my first thought on hearing of the complaint from Lieutenant Bob Long, who was then traffic sergeant, was that since no law had been violated, and there was no one to be held responsible, it was not a matter for a law enforcement agency. But on further consideration, we decided that perhaps the safety of the public might be at stake, thus, making it our business. So we proceeded to the scene to investigate.

We found that things were just as represented, and Officer J. E. Chadwick, who was off duty, and owned a hive of bees, had been called at home by one of the complaint clerks, and was at the scene preparing to hive the swarm without benefit of gloves, smoker, or veil. He had a homemade eight-frame hive sitting on the sidewalk near the store window, and was cutting two pieces from a cardboard box with his pocket knife.

The bees remained gentle even while Officer Chadwick scraped them gently and carefully from the glass with one of the cardboard scoops onto the other, which he held with edge against the glass underneath the cluster. Then with the top off the hive, he dumped several scoopfuls onto the top bars, replaced the hive top, and dumped the remainder of the cluster in front of the hive entrance. The bees began to enter the hive and Chadwick reduced the entrance. Then when most of the bees were in, he closed the entrance by packing it tightly with a piece of burlap.

While we were waiting for the bees to crawl in, Chadwick asked me if I wanted them. Of course, you know the answer. I called my brother who came and hauled the hive to my house in the trunk of my car and set it in the back yard. When I got home that night, I cautiously opened the entrance.

A couple of days later, I saw the bees were working, bringing in pollen and nectar from the fall-blooming wild flowers. I fed them two quarts of sugar water with a Boardman feeder, and they drew some comb and stored a little honey before cold weather. As I didn't have either a smoker or veil, I could tell little about what was happening inside the hive, and although I was told by several people who claimed to know about such things that the bees would probably starve during the winter months, I had high hopes. In March when the earliest bloom began to appear, I was elated to see the bees again bringing in pollen. I thought my hive had weathered the winter and was all set to make me some honey. But then we had two weeks of cold, wet weather, and when warm weather and the sunshine returned and no bees appeared at the entrance, I was more than disappointed. I opened the hive and found a small cluster of bees--dead on empty combs.

That was my first attempt at keeping bees, and although it ended in failure, my interest was sufficiently aroused to start me to reading and thinking about bees. Later that spring I bought and installed a package. The queen looked healthy enough, but after the bees released her, she disappeared from the hive, and the bees soon dwindled to nothing. Then I heard through the police switchboard of a swarm which had settled in shrubbery in a man's yard on the other side of town. With the aid of another amateur beekeeper, C. G. Tyler, I managed to hive this swarm, and it turned out to be my first successful hive, producing a few pounds of surplus before the end of summer.

Now in spite of all these sorry attempts and unsuccessful efforts, I consider myself an up and coming hobby beekeeper. I have at this time five strong colonies, and hope to increase to twice that in the coming year. If they continue to be as interesting and entertaining to me in the future as they have been in the past four years, I guess I'm hooked for good.

What Is One Part Per Million?

IN THE LAST year or two the Food and Drug Administration has been investigating many food products to determine whether they contain harmful levels of contaminating residues. The quantity of the impurities is usually described in parts per million.

Most lay-people have no conception of what constitutes one part per million residue on crops. The following examples may help you make this interpretation for them.

1. One inch is one part per million in 16 miles.
2. A postage stamp is one part per million of the weight of a person.
3. A one gram needle in a one ton hay stack is 1 ppm.
4. One part per million is one minute in two years.
5. Lay your hand on the ground and it covers 5 ppm of an acre.
6. If one pound of a chemical lands on an acre of alfalfa the hay has 500 ppm.
7. One ounce of a chemical would impart 31 ppm.
8. A teaspoon of material on an acre of alfalfa would impart 5 ppm.
9. One teaspoon of DDT drifting onto 5 acres of alfalfa puts 1 ppm in the hay, and the Federal Law says that the hay must contain none.

—Reprinted from Western Crops and Farm Management.

NIGHT RAIDERS

"I spent a lot of time scratching my head for clues and stingers, until one morning . . . . . "

W. J. PEARCE
Golden, Colorado

HAVING KEPT BEES as a hobby since 1910, I have had my share of unusual experiences. One event, however, in my half century of beekeeping, is remarkable, if not unique:

Although my garden adjoins my apiary on the north, the bees normally pay no attention to me while I am cultivating the plants. One summer, however, they became unduly interested in me; so much so that I had the feeling that some of them were becoming attached to me, mostly in my hair. Moreover, if I presumed to raise my head in their awful presence, the hair would be my eyebrows.

Knowing that bees are normally tractable during warm summer days, I sought a reason for their unseasonably sting-happy dispositions, and for the mat of dead bees in front of one hive.

After checking and finding the ill-tempered colony healthy and queen-right, I presumed the queen was laying hard-boiled eggs. I, therefore, killed the queen, introduced a ripe cell, and awaited developments. I didn't have to wait long: more welts developed on the back of my neck. My meddling only intensified their wrath.

The next summer I soon learned that my troubles had pyramided. I then had eight hives with cairns of dead bees in front of them, and proportionately more bees in my hair.

I spent a lot of time scratching my head for clues and stingers, until one morning, while taking a drink at a hydrant, I saw a huge garter snake sunning itself in the weeds.

When the drowsy snake espied me, it slithered through the weeds and into the base of a nearby hive. The bees emerged like a waterfall in reverse.

After regarding the cloud of bees swarming around the hive, I broke off a weed-stalk and poked it into the hive.

The snake came out in a hurry and scurried under one of the hives that had a mound of dead bees in front of it. The size and sheen of the reptile, plus the piles of dead bees rang a bell: Could it be, I asked myself, that I have been an unwitting host to a snake?

In response to the conjecture I hunted up a round-pointed shovel, carefully tipped the hive forward, and made rhubarb sauce of the uninvited guest. I then looked under another hive that had a couple quarts of dead bees as a landing field; and, sure enough, another snake was indulging a high-jacked honey hangover.

After killing eight of the fattest, shiniest snakes that I had ever seen, I concluded that one of the reptiles must have learned to seize the fanners at night and squeeze the honey and life

(Continued on page 314)

a look at Package Bee Production

Differences between requirements of management and equipment for honey production and for package-bee production are discussed briefly and methods which will increase the yield of bees per colony are suggested. Maximum production of bees is obtained by providing continuous reserves of honey and pollen, by regular removal of bees so that a population of about five pounds of bees remain after each shaking and by maintaining a shaking schedule so not more than six pounds of bees need be removed at any one period to maintain the optimum population in the hives.

REQUIREMENTS FOR the production of package bees and a crop of honey are similar. Important for both are prolific queens, adequate equipment, abundant stores at the proper time, a knowledge of the local nectar and pollen sources, and a system of management planned for the particular environment. The beekeeper can control all the factors affecting the development of his colonies even though weather and field resources influence the magnitude of his management problem.

However, the equipment used and the methods of early spring management differ depending on whether a crop of bees or honey is desired. The bee producer aims to maintain colony populations at a level that will produce the maximum amount of brood with minimum equipment. On the other hand the honey producer strives, by using much more equipment, to have maximum populations not preparing to swarm at the beginning of the major honey flow. The package-bee producer, by periodic removal of bees, tries to maintain an optimum and uniform hive population whereas the honey producer needs a maximum field population. These fundamental differences are frequently misunderstood by beekeepers.

Normal Colony vs. Package Colony Development:

A normal colony at the beginning of the winter period is defined as one with a young queen, 10-12 full frames of honey, at least three frames of pollen, not less than six pounds of bees, and housed in a three-story hive. Figure 1 shows the average seasonal change in brood and population for four such colonies at Baton Rouge, Louisiana. Except for the necessary disturbance of determining population and sealed brood at 12-day intervals, no feeding, manipulation, or equipment changes were made until the honey flow made super room necessary.

On January 1 the colony had about four pounds of bees. The first sealed brood was recorded on January 18. A gradual decrease in population occurred until about March 12, when the population began a rapid rise to reach a peak about May 15. The solid line represents the overwintering bees and is computed from actual populations plus young bees resulting from the sealed brood. The curve representing sealed brood shows that a slow and uniform

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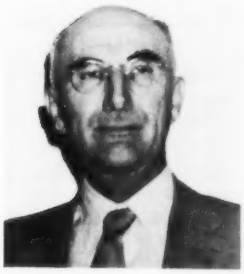
WARREN WHITCOMB, JR.
Entomology Research Division,
Agricultural Research Service, USDA
Baton Rouge, La. 1/



increase occurred from January 18 to about March 12, then a rapid increase until about April 1, with a more moderate increase thereafter until a peak was reached on about April 16.

Figure 2 gives similar data on a colony managed for production of package bees. In a yard of 12, this colony produced more bees than any on which complete data was available. The colony was wintered in a three-story hive. During the last week in December it was lightly sprayed with sugar sirup to stimulate egg laying. It had abundant honey stores and was given pollen cakes until field sources and flight weather made pollen feeding unnecessary. To stimulate the commercial practice of removing bees to stock the queen yard, approximately four pounds of bees were shaken from the colony on March 9. Regular shakings at about 10-day intervals were started on March 28 and continued until May 29. This colony produced 37.7 pounds of bees and the yard average was 32.2 pounds.

As can be seen by a comparison with the data graphed in Figure 1, this colony started brood rearing earlier, the overwintered bees lived a shorter time, and the minimum population occurred nearly a month earlier. The curves representing both sealed brood and population are much steeper and indicate that a more rapid colony development took place and that brood rearing was maintained at a much higher level.

The increased performance of the package-production colony over the

1/ In cooperation with Louisiana State Univ.

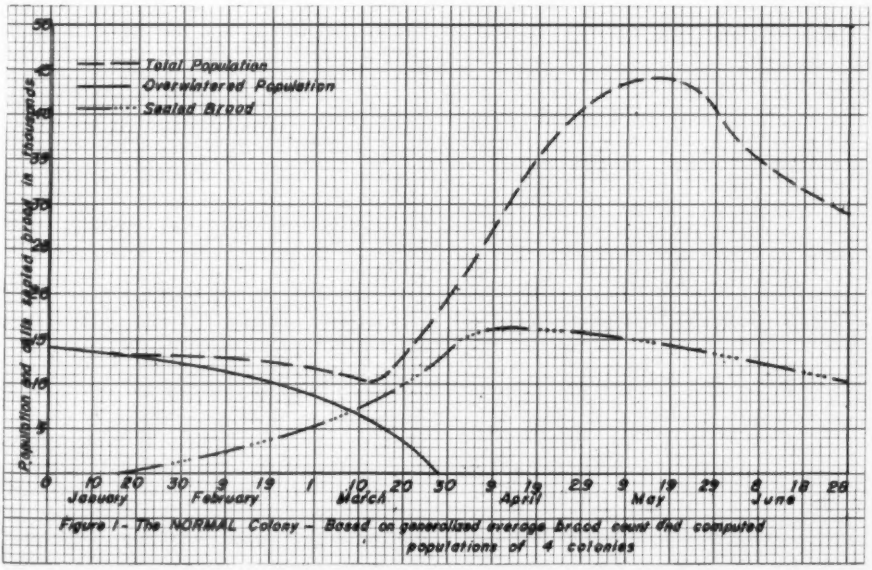


Figure 1 - The NORMAL Colony - Based on generalized average brood count and computed populations of 4 colonies

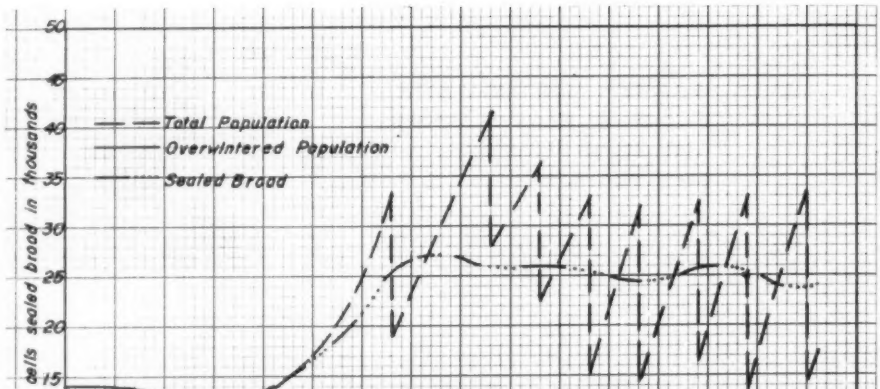


Figure 2- The PACKAGE BEE Colony — Based on populations and brood counts of a single high-producing colony

normal colony is due primarily to two factors: (1) The presence of abundant pollen close to the brood nest at all times, and (2) the regular removal of enough bees to maintain a population level conducive to maximum brood production. Egg-laying rates in normal colonies seldom, exceeded 1500 eggs per day, but in the package-bee colony egg production approached 2200 eggs per day in some periods.

Requirements for Maximum Production:

In the Baton Rouge area egg laying usually starts in mid-January. It may be intermittent until mid-February or even later depending on weather and plant conditions and on stores, particularly pollen, within the hive. Brood rearing may be stimulated earlier by colony disturbance through manipulation, by flight (particularly if food is available in the field), or by spraying lightly with sugar sirup. After such stimulation, brood production will then be continuous if food resources are adequate and properly placed in the hive. The rate of brood rearing will be dependent primarily on population and the egg-laying ability of the queen.

In the fall adequate honey or even sugar-sirup stores can easily be provided for colonies. From 200-600 square inches of pollen reserves may be present in normal colonies at the beginning of November, but such reserves are generally low in January. At Baton Rouge bees are able to fly on not more than 50 percent of the days between January 1 and March 10. Cold, windy, or rainy weather not only prevents the gathering of pollen but also may prevent its production. Pollen cakes, containing not less than 20 percent of pollen, placed immediately above the brood nest prevent pollen deficiencies. A dearth of pollen, such as occurred throughout much of the shipping area in 1960, curtails brood production. Such a dearth also causes an abrupt drop in pollination because of an accelerated death rate of hive bees 12-20 days after the pollen shortage occurs.

A prolific queen supported by a good population requires 12 full combs for eggs and brood. Because of space occupied by honey and pollen, combs can seldom be fully utilized by the queen for brood production, and the 20 combs of a two-brood-chamber hive often do not allow full colony development. Three-story standard hives are necessary for package-producing colonies prior to the shaking period. At the beginning of the shaking period it is often possible

to reverse the hive bodies so that the top body containing honey is placed on the bottom board and the two lower bodies above the honey. The colony can now be operated essentially as a two-story colony during the shaking period without a decrease in brood production.

After shaking, maximum brood production is achieved by maintaining colony populations at about five pounds or roughly 18,000 bees. It has been determined that about 10 days between shakings is the optimum interval to allow for production when four pounds of bees are removed at each shaking. This schedule maintains colony populations at a level favorable to maximum performance of the queen (Figure 2). Removal of more than six pounds of bees at a single shaking always proved detrimental to colony organization and resulted in a decrease in brood production. Reducing the colony population to less than four pounds of bees after shaking also resulted in decreased brood production.

The maintenance of a regular shaking schedule is easy in an experimental yard, but it is probably the most difficult problem for the package-bee producer. First, he must meet the demands of his customers for volume and time of shipment. He must schedule most of his volume and all of his large orders well in advance of the shipping season. Second, in order to obtain maximum production of bees, he must prepare a shaking schedule for each apiary to take advantage of differences in locations with respect to their early pollen and nectar resources, accessibility by truck in wet weather, number of colonies, and similar factors. And third, he must co-ordinate the stocking of the queen yard so that early removal of bees for this purpose does not handicap colonies in outyards for future package-bee production. The beekeeper, using the methods briefly outlined, can produce and ship bees in spite of adverse weather conditions, but he cannot control queen production since good weather is necessary for satisfactory matings. Cold, rainy, or windy weather in the South, which prevents mating of queens, can play havoc with a shipping schedule. Adverse weather in the North, which necessitates changes in shipping dates, can be equally disastrous.

The Economics of Production:

Maximum per-colony production of bees requires more labor, equipment, and honey than many shippers now provide. Shippers would probably benefit by operating a smaller number of colonies at a higher level of production. Fewer colonies would result in the need for fewer outyards, which perhaps could be located close to the center of operations. Travel and labor costs, made higher because of the nonproductive time required for travel to distant outyards, would be reduced. These costs are important management factors in a package-bee business.

The same consideration of labor costs is necessary in deciding whether to maintain colonies in the three bodies required for maximum utilization of the laying capacity of queens or whether to use less equipment with brood production probably restricted. The larger populations developed in well-managed colonies require more attention, especially to the shaking schedule and the amount of bees removed periodically in order to maintain the most productive population level. Labor and equipment costs may be higher for the larger and more populous colony but cost per package of bees will be lower because of increased production.

In the Baton Rouge area our seasons start about a month earlier than the regularly accepted dates. Winter preparation is usually completed before November 21 and normal spring management starts no later than February 21. The basic requirements of good wintering — prolific queens, ample honey, and young bees — are well understood and generally provided during the fall. The need for ample pollen to support brood rearing independent of weather and plant conditions is too often overlooked. Field sources during January, February, and March usually cannot provide enough pollen for the continuous high level of brood production necessary for maximum populations at the start of the shaking season. No substitute exists for fresh pollen, but pollen cake, made with stored pollen mixed with soy flour and sugar sirup, gives good results. The cost of trapping and storing pollen, and feeding pollen cake, is small compared with the increased

(Continued on page 314)

How to Increase Honey Production Per Colony

With honey prices up and surplus stocks down, this is the year to have a big crop and this article will tell you how.

W. H. PURSER
Assistant Entomologist
S. C. State Crop Pest Commission
Clemson College
Clemson, South Carolina

SEVERAL IMPORTANT items must be considered when thinking of raising the average yield of honey per colony in a yard. First, and possibly the most important factor, is the beeman or beewoman. Doing what needs to be done on time is a must in the bee yard. You can fail the bees and the bees will fail you. Lack of feed or stores caused many colonies to starve to death during the March freeze of 1960. Sometimes this happens to good beekeepers.

The beekeeper should know something about agronomy. Soils as well as plants are important in producing a honey crop. Find the best soil in your section of the State, and you will find the best honey producing area, other things being equal.

To be a good beekeeper and produce a good average per colony, you must know something about botany. Where the honey plants are located in abundance and when they bloom must be known. Figure 1 shows the tupelo gum, our first major honey plant. It blooms in March and early April. Many think it blooms in May but are mistaken.

Figure 1. A branch from the Tupelo Gum tree.

Another very important factor in producing a good crop of honey that many beekeepers overlook is a set of good worker combs. The normal colony of bees that builds a home without any foundation will yield from 30 to 40 percent drone cells. Using short strips of foundation may cause the bees to build the combs straight but does not cut down on the percent of drone cells. It is never practical to use short strips of foundation. Good brood combs are a must. Often, if strips of foundation are used in the shallow supers, the bees build drone comb in the remaining part of the frame. The queen later lays in the drone comb, producing an overabundance of drones. Drones are more expensive to raise to adult age than are workers. Figure 2 shows a comb which measures 50 per cent drone cells (large cells). This type comb should never be used in the brood nest.

Swarm Control

Keeping all the bees at home is also a must in getting high average yields. Let the old bees swarm out and your field force is gone. Still worse is to have the same colony swarm two or three times. Some beekeepers are glad to get an increase by having their best colony swarm, but swarming is not the best way to make increase. If a colony builds up and gets eight or ten frames of brood ahead of the honey flow, two frames of brood and one frame of honey can be taken from them with enough bees to cover the brood and used for an increase. This increase should be given a queen and transferred to another yard. The strong colony will build back what they have lost within 10 days, and will very likely not try to swarm. Spreading the brood nest by moving good empty combs alternately right among the brood as in Figure 3 is a good practice.

Pulling a two-pound package from the over zealous colonies is also a good way to control swarming. Most of the time, taking from the strong and giving to the weak colonies will help the weak and control swarming in the stronger colonies. Exchanging positions with strong and weak colonies will effectively control swarming. It will pay to exchange some brood in extreme cases. Giving some of the brood from the strong to the weak colony is helpful to both colonies. Be sure in this case that the weak colony has food to take care of additional young. Moving empty combs or foundation from the side into the brood nest is also helpful.

Getting a Good Honey Crop Is a 12-Month Job

Bee colonies should be checked for stores, population, condition of the queen, disease, and brood pattern every month, in this area. On warm days in

Figure 2. Combs like this should be eliminated from the brood nest.

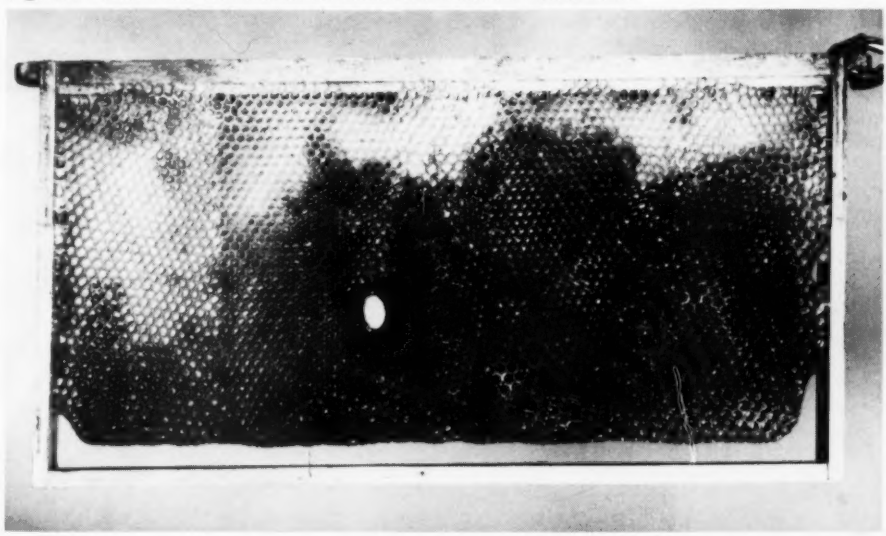


Figure 3. Good empty combs should be used in spreading out the brood nest.

the winter, the checking, active as in Figure 4, can be done by watching the flight of the bees at the entrance of the hive, and lifting the rear of the hive to check the weight. Trouble is indicated by a colony of bees that is inactive when others are flying. This colony should be examined for disease, queen trouble or starvation. Little can be done for queen troubles when the bees have no brood. Sometime ago, as the honey flow from sourwood was ending, a colony of bees was found with a drone-laying queen. This equipment was used to make an increase from a good strong colony. Otherwise the worms would have gotten these combs within weeks.

The queen is the most important factor in getting a honey crop. The queen should be large, young — not over two seasons old. Some queens are better the second year than the first. Some strain of bees are better than others for honey production. The beekeeper, therefore, should be cautious in selecting stock. Good strong cell builders that are well fed will give good cells as in Figure 5. This kind of cell will produce large healthy queens.

Having the bees at the right place at the right time requires some study on the part of the beekeeper. Migratory beekeeping is the only way to get the largest yield of marketable honey. You must know where and when the honey flow starts and ends. Some honey plants overlap in the same location, but most single flows from one plant are over in three weeks or less. In the Carolinas, Georgia, and Alabama, sourwood follows close on hairy vetch. These are two honeys that are very much alike in color. Many people prefer vetch to sourwood. The principal part of the vetch honey flow comes in May, and sourwood begins in late June. You will have time to get the vetch from the hives and pack it before moving to the mountains. Gallberry, in the lower part of these states, is also a May crop. Bees could be moved from gallberry section to sourwood. By the time

Figure. 4. Colonies should be examined periodically especially during the spring.

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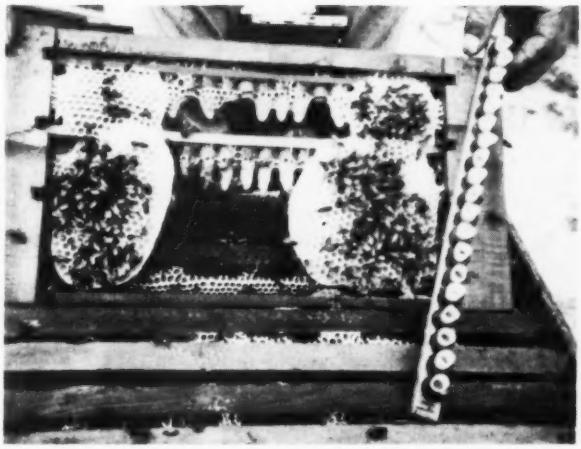


Figure 5. Good, strong, well-fed cell builders turn out cells that look like these, which in turn produce large healthy queens.

the sourwood is over and packed, the soybean is blooming and will in some locations produce a good crop of honey very nearly as light and good as vetch honey. In Figure 6 bees are being loaded for a 30-mile trip to the mountains.

Supering the bees properly is neglected by too many beekeepers. We have entirely too many "one-super producers". Often five supers are needed on some colonies before any are ready to take off. In one location in Greenwood County, some colonies produced seven supers of honey, weighing approximately 200 pounds. These bees were later moved to the mountains for sourwood and produced four and five supers there. Generally, as the honey flow begins, you should begin placing a super with full sheets of foundation under the supers that are half filled or more. These supers are always on the stronger colonies which are being run for cut comb honey. The colonies that are average or less should be supplied with empty combs on top of the partly filled combs. All supers are removed soon after they are capped. This is imperative for the cut comb honey as

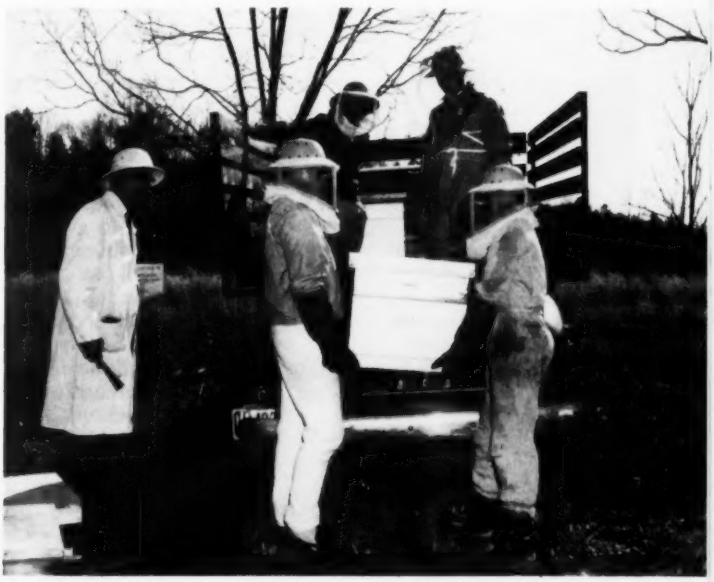


Figure 6. Colonies are trucked 30 miles to the mountains for the sourwood honey flow.

the cap will be travel-stained, if left for more than five days. Having some good empty combs to place on the hive will help keep the brood nest from being congested and result in a higher average yield per colony.

So far, nothing has been said about the size of brood chamber. The double brood chamber might work fine for "let alone beekeeping" in one location. But the single story eight-frame hives are very nearly ideal for migratory beekeeping. Ten-frame hives are heavier to handle and haul. The eight-frame hive is hard to beat for cut comb honey production when moving from place to place, after a man becomes 50 years of age.

Queen excluders are fine for the hobby beekeeper, but, to commercial producers that need a considerable amount of extracted honey, they are a hindrance. The time that it takes to remove a queen excluder is costly. It also cuts down on the amount of honey the bees bring in and makes swarming harder to control.

The apiary should be located near a stream where the sun can shine on the hives early in the morning, but shade should be provided for the rest of the day. A pine orchard makes a fine setting for a bee yard, and also will furnish fuel for the smoker. Trees also furnish some windbreak from northwest winds in cold weather. Being near a stream will not only furnish water, but there will also be some good soil up and down the stream.

Feeding a stimulant ahead of the honey flow is considered good practice, especially if some increase is desired. However, swarming is hard enough to control without any unnecessary feeding.

Staggering the supers for ventilation is very valuable in 90° weather, even though the bees are in full shade. Some beekeepers use a top entrance, which has a two-fold purpose — ventilation and convenience.

Adding queenless packages to the colonies that are off in strength is a good practice. This will certainly pay off if the honey flow is good. These bees should be added just as the honey flow begins.

In conclusion, get your bees "bubbling over" with workers of the right age at the time the honey flow begins. Locate them well, and keep them supplied with supers on time. Go into the brood chamber at least every two weeks and check conditions. Make an increase with colonies that build queen cells or exchange positions with a weak colony and destroy the queen cells. Be careful in destroying queen cells, lest you render the hive hopelessly queenless.

TEN MOST WANTED MEN

1. The man who appreciates the value of bees to Agriculture.
2. The man who thinks enough of his bees to give them proper care.
3. The man who recognizes diseases of bees and will prevent their spread.
4. The man who thinks more of his bees than he does of his fishing.
5. The man who is willing to learn by attending meetings and Short Courses.
6. The man who is willing to help some boy or girl with their bees.
7. The man who can see his own faults before he sees the faults of others.
8. The man who has a willing mind rather than a "brilliant" mind.
9. The man who measures his success by the help he gives rather than the help he receives.
10. The man who is concerned about the welfare of the beekeeping industry and that of his fellow beekeepers.

Honey Support Price At 11.2 Cents A Pound!

SECRETARY OF Agriculture, Orville L. Freeman, today announced a 1961 honey support price at a national average support price of 11.2 cents a pound. This reflects 75 percent of the March 1961 parity price adjusted to a 60-pound container basis.

The 1961-crop honey support price is 2.2 cents per pound higher than the support price recommended in the 1961-62 budget prepared by the previous administration.

In announcing this support price, Secretary Freeman stated:

"The 1961 honey support level is more realistic in relation to market prices which in 1960 averaged about 91 percent of parity.

"Support loans on honey provide the very important function of offering interim financing for some 200,000 beekeepers to assist them to market their crop in an orderly manner. The cost of this program to the Commodity Credit Corporation during the past decade has been negligible. At the same time, the program has provided market stability to producers.

"This lends encouragement to maintain the population of bees which are vital for the pollination of important seed, vegetable and fruit crops. Beekeepers receive little renumeration for this function, with most of their income resulting from the byproduct of pollination, honey."

Honey is an important source of sweetening and consumption has been climbing in recent years.

The honey price-support program is authorized by the Agricultural Act of 1949 at a level between 60 and 90 percent of parity. The 1960-crop national average honey price support was 8.6 cents per pound reflecting 60 percent of parity.

The support price announced today applies to honey marketing during the 1961 season which begins April 1.

How to Get a High Swarm without Climbing

DR. RICHARD TAYLOR
West Barrington, R. I.

TAKE A DEEP or shallow frame of unsealed brood from one of your colonies, fasten two frames of drawn comb on each side of it with a few strips of wood and some tacks. Now get a line over the branch near the swarm, either with a fish pole or by tossing it over, attach the three frames to the other end, and raise them to the swarm, so they are just touching it. Unsealed brood is irresistible to bees, and in a few minutes every bee will be clustered on those frames. Lower the frames with the clinging swarm, pop them into a hive. No shaking, no broken neck, and no straggler bees.

Randy Taylor with a nice swarm clustered on drawn combs.

Nobody Told Me

RAY L. McLESTER
Paragould, Arkansas

IN THE Commercial Appeal of Memphis, March 12, without byline, appeared a story entitled "Queen Bee Rules Workers, Drones Alike". Excerps from this rather lengthy article include such statements as "Bees live in a house called a hive, made from a thin wax which they make in their bodies"..... "The worker bees toil from dawn till dusk, gathering nectar (which is the sweet juice of the flower) and the pollen (which is the golden dust that we can see in the center of the blossom) which will become thick honey"...."the workers are always females, averaging about one and one-half inches long". Last, we have the drones, whose only purpose is to marry the new queen. After the wedding.... all other drones are driven from the hive". "When the new queen returns to the hive to lay her eggs the old queen leaves with her loyal subjects following".

NOBODY TOLD ME THESE THINGS. I did not know a queen "ruled" in the sense implied, or that the "hive" was made of thin wax. Nobody told me that "sweet juice" and "pollen" made "thick honey". Oh Boy! If I could just get hold of some worker bees an inch and a half long! And what puzzles me is why my old queens do not wait until after the new queen returns from her wedding trip to "lay her eggs" before she swarms and goes out with my working force, as stated here.

It strikes me that beekeepers should be careful of the type of story they give to some reporter who has such an apparent lack of knowledge of bees. A good "bee story" is always good publicity but such a badly distorted one, appearing in a great daily paper such as the Commercial Appeal of Memphis, is a reflection upon integrity and a presumption on facts that should not be encouraged.

When Answering Advertisements, Please Mention GLEANINGS IN BEE CULTURE

"I ALWAYS DREAMED OF SEEING MY NAME IN LIGHTS!"

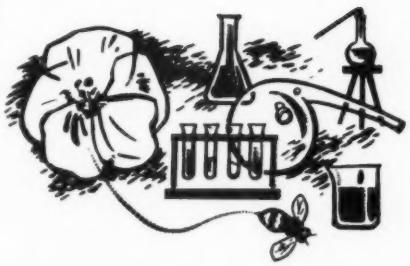
KEEP GLEANINGS COMING

White House Serves Honey for Breakfast

WHITE HOUSE — And something new — honey — has been added to the Kennedy breakfast menu. House Speaker Rayburn, who has eaten honey every morning for 40 years, complained he wasn't served any at JFK's breakfasts for Congressional leaders. A supply was ordered for Mr. Sam and now it's on the table regularly.—Taken from Newsweek's Periscope, March 13, '61.

Loose Shoestrings

IF YOU HAVE trouble with your shoestrings coming untied all the time try this. Remove the shoestring and rub it over a piece of beeswax in the same manner you would chalk a chalk string. After this you will find when you tie your shoes they stay tied and it also makes your shoe laces last longer.



Research Review

DR. ROGER A. MORSE
Research Editor of Gleanings
and Ass't. Prof. of Apiculture
Cornell University, Ithaca, N. Y.

Honey Marketing Bulletin:

THE UNIVERSITY of California has just issued a bulletin on honey marketing which contains a wealth of information about beekeeping in the United States. Though the bulletin was published in California, all states and honey-producing areas are considered.

The study was based on questionnaires answered by about 2,000 beekeepers, honey packers and state apiculturists. Much of the information collected is summarized in tables. Included is information on the pollination fees charged in various parts of the country, data on honey imports and the major markets receiving honey and data about what hobby as well as commercial beekeeprs do with their honey.

Some of the marketing problems covered include information about the German market and the "diastase test" to which Germans put imported honey. Information is also given about countries which compete with us for foreign markets.

A copy of this bulletin may be obtained from the Publications Office, University of California, Berkeley, California.

Bauer, Frederick W.
Honey marketing. California Agricultural Experiment Station Bulletin 776. December, 1960.

Honeybee Larvae as Bird Food:

REARING BIRDS in captivity poses many problems including an adequate diet. Certain birds feed normally on insects and thus it is natural to look to honeybees as a possible source of food.

In these tests it was determined that a five-frame nucleus colony yielded a pound of larvae each six days. The queens were confined on each frame for a period of three days and thus the larvae were nearly the same size when harvested.

A special technique is used to harvest the larvae. The larvae are harvested nine to eleven days after the eggs are layed and at that time most of the cells are capped. The cappings are removed by using a finely serrated knife. The comb is then placed on end, over a piece of cheesecloth and a stream of water is directed on the larvae. Using this method the larvae wash from the comb readily and down the frame onto the cheesecloth. This same method of removing honeybee larvae may very well have application where persons are interested in obtaining larvae for scientific study or for use as human food as was suggested by Hocking and Matsumura (see Gleanings in Bee Culture, 1960, page 669).

Gary, Norman E., Robert W. Ficken and Robert C. Stein
Honeybee larvae (**Apis mellifera** L.) for bird food. Avicultural Magazine 67:27-32. 1961.

Two New Films:

TWO NEW FILMS are now available from England on the subject of queen substance. Both were made with the cooperation of Dr. C. G. Butler and the Rothamsted Experimental Station. The titles are: "The Discovery of Queen Substance" and "The Measurement of Queen Substance".

The price for each film is $58.50 and they may be obtained from: C. P. Abbott, 111 Dormers, Wells Lane, Southall, Middlesex, England.

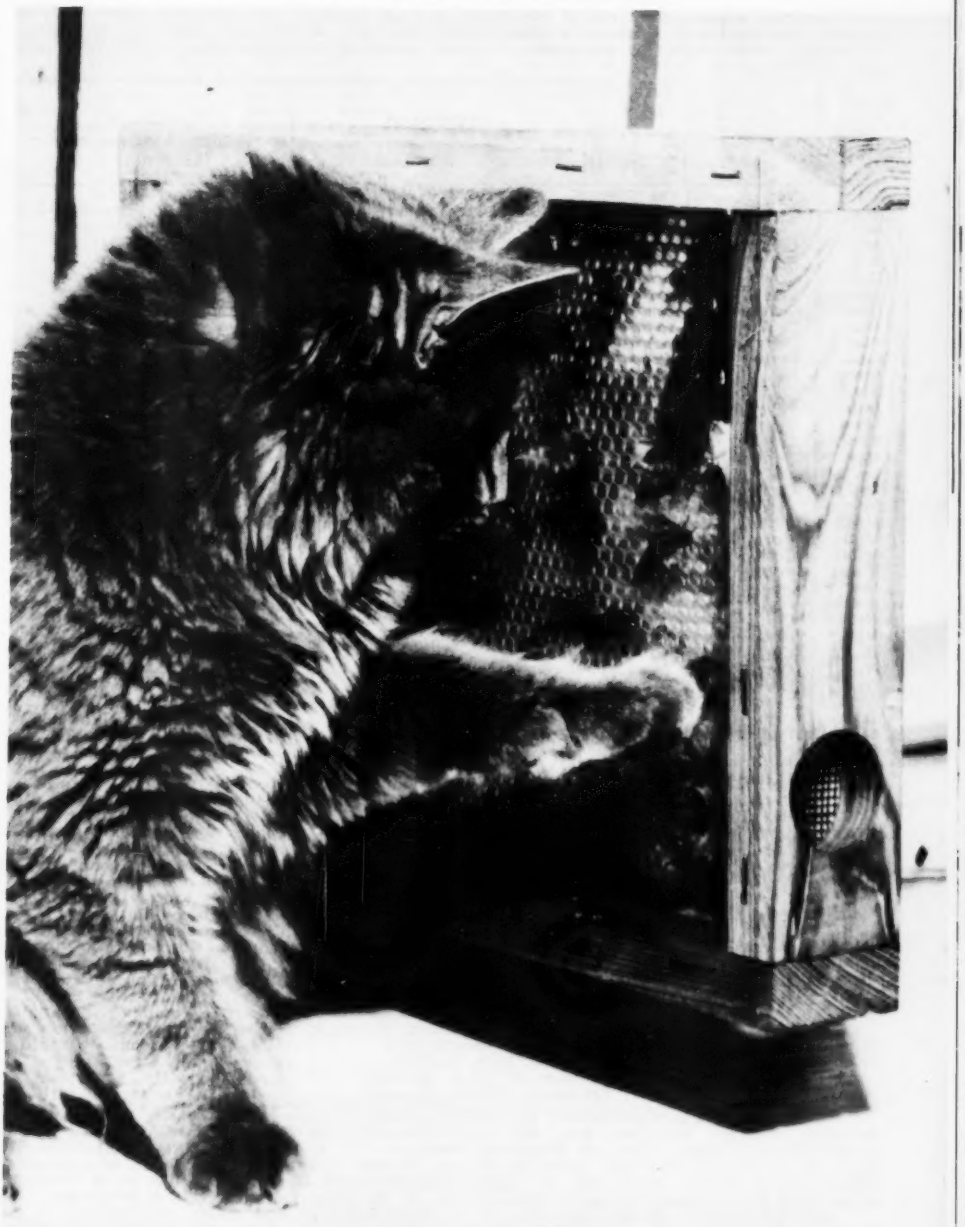
Dr. Jonathan W. White, Jr. (left), U. S. Department of Agriculture chemist, who heads utilization research on honey (see page 292), receives a $300 award from Dr. P. A. Wells, Director of the Agricultural Research Service Eastern Utilization Research and Development Division, Wyndmoor, Pennsylvania. — USDA Photo by M. C. Audsley.

One of the "has been" Buckeye hives with packing on top, sides, ends, and bottom, which was popular some years ago. It was manufactured by The A. I. Root Company.

"Kitty K

NEWS REEL

"Kitty Kat" enjoys the new Honeybee Hobby Hive after it is installed.



Who's Who in APICULTURE

To supply a handy reference of the names and addresses of state and provincial apiary inspectors, secretaries of beekeepers' associations, extension workers in beekeeping, and other information often needed by our readers we have corrected our Who's Who in Apiculture as of April 1, 1961.

STATE OR PROVINCE	BEES ON COMBS ADMITTED	NET WT. LAW EXT.	NET WT. LAW COMB	INSPECTOR STATE OR PROVINCE	SECRETARY STATE ASSOCIATION
Ala.	No	Yes	Yes	C. North & S. Hawkins, Montg.	Walter Grimes, Auburn
Alta.	Permit	Yes	No	Alan M. Frost, Edmonton	Mrs. A. S. Bird, Edmonton
Ariz.	Cert.	Yes	Yes	Lyman E. Coe, Phoenix	Clarence Benson, Phoenix
Ark.	Cert.	Yes	Yes	Geo. W. Freeman, Little Rock	Donald E. Bailey, Malvern
B. C.	No	Yes	Yes	John Corner, Vernon	John Corner, Vernon
Calif.	Cert.	Yes	Yes	Homer Len Foote, Sacramento	R. K. McCaffree, Rosemead
Colo.	Cert.	Yes	Yes	Pat Powers, Denver	Dooley Toyne, Canon City
Conn.	Cert.	Yes	Yes	W. T. Brigham, New Haven	Mrs. Harry Powell, New Britain
Del.	Cert.	Yes	Yes	Lawrence Thompson, Dover	Inactive
Fla.	Permit	Yes	Yes	R. A. Martin, Gainesville	F. A. Robinson, Gainesville
Ga.	Permit	Yes	Yes	W. E. Blasingame, Atlanta	Jack Girardeau, Tifton
Idaho	No	Yes	Yes	James H. Allen, Middleton	Lauren I. Shaver, Gooding
Ills.	Cert.	Yes	Yes	Carl E. Killion, Paris	Hoyt Taylor, Pleasant Plains
Ind.	Permit	Yes	Yes	G. Earl Huff, Indianapolis	G. Earl Huff, Indianapolis
Iowa	Permit	No	No	Wilfred S. Craig, Ames	Glen Stanley, Des Moines
Kans.	Cert.	Yes	Yes	R. B. Boren, Manhattan	A. W. Magers, Kansas City
Ky.	Cert.	Yes	Yes	Tommy Hines, Morgantown	William Eaton, Winchester
La.	No	Yes	Yes	C. E. Smith, Baton Rouge	Joseph J. Perry, Lake Charles
Me.	Cert.	Yes	Yes	Reginald B. Swan, Brewer	Mrs. Freda Graves, Bangor
Man.	Permit	Yes	Yes	D. R. Robertson, Winnipeg	D. R. Robertson, Winnipeg
Mass.	Cert.	Yes	Yes	Milo R. Bacon, Boston	Wallace R. Parker, W. Boylston
Mich.	No	Yes	Yes	D. P. Barrett, Lansing	Margaret Seidelman, Ionia
Minn.	Cert.	Yes	Yes	C. D. Floyd, St. Paul	F. Q. Bunch, Welch
Miss.	Permit	No	No	Homer Tate, State College	Homer Tate, State College
Mo.	None	Yes	Yes	None	James A. Worrel, Independence
Mont.	Permit	Yes	Yes	Lloyd M. Graham, Bozeman	Mrs. O. R. Burdett, Laurel
Nebr.	Cert.	Yes	Yes	C. J. Walstrom, Lincoln	Mrs. DeEtta Bellin, O'Neill
Nev.	Permit	Yes	Yes	Floyd Hilbig, Reno	Earl Nygren, Fallon
N. B.	Cert.	No	No	Vacant	Walter Carlisle, Fredericton
N. H.	Cert.	Yes	Yes	J. G. Conklin, Durham	Barbara Prior, Westminsler, Vt.
N. J.	Cert.	Yes	Yes	J. C. Matthenius, Phillipsburg	E. W. Sutvan, Laurel Springs
N. M.	Cert.	Yes	Yes	Dallas Rierson, College Park	Berna L. Johnston, Belen
N. Y.	Cert.	Yes	No	A. C. Gould, Albany	Mary Cary Trippe, Syracuse
N. C.	Permit	Yes	Yes	J. F. Greene, Raleigh	S. C. Squires, Chapel Hill
N. D.	Cert.	Yes	Yes	Jas. R. Dogger, Fargo	Jas. R. Dogger, Fargo
N. S.	No	Yes	Yes	E. A. Karmo, Truro	G. G. Smeltzer, Kentville
Ohio	Permit	Yes	Yes	S. E. Bailey, Columbus	Wendell P. Smith, Sunbury
Okla.	Permit	Yes	Yes	Clyde Bower, Oklahoma City	Stanley Neel, Mangum
Ont.	Permit	Yes	Yes	P. W. Burke, Guelph	G. F. Townsend, Guelph
Oreg.	Imm. Regis.	Yes	Yes	Kenneth Goeden, Salem	Oliver W. Petty, Albany
Pa.	Cert.	Yes	Yes	Geo. B. Sleesman, Harrisburg	Robert L. Crimbring, Canton
P. E. I.	No	Yes	Yes	Dave MacLean, Charlottetown	W. A. Burns, Charlottetown
Que.	No	No		Henri J. Plourde, Quebec	Gaston Ringuet, Quebec
R. I.	Cert.	Yes	Yes	Harry L. Hansen, Kingston	Mrs. May Murray, Warwick
Sask.	Permit	Yes	Yes	D. McCutcheon & S. E. Bland	D. L. Campbell, Tisdale
S. C.	Cert.	Yes	Yes	W. H. Purser, Clemson	Cleve Sprouse, Jr., Woodruff
S. D.	Cert & Per.	Yes	Yes	Clarence Beck, Sioux Falls	Winston Ullman, Brookings
Tenn.	Cert.	Yes	Yes	L. H. Little, Nashville	L. H. Little, Nashville
Texas	Cert.	Yes	Yes	C. J. Burgin, College Station	C. J. Burgin, College Station
Utah	Cert.	Yes	Yes	Lowell P. Hicks, Salt Lake	Lowell P. Hicks, Salt Lake
Vt.	Cert.	Yes	Yes	Robt. M. Mead, White River Jct.	Enoch H. Tompkins, Burlington
Va.	Cert. & Per.	Yes	Yes	H. W. Weatherford, Vernon Hill	H. W. Weatherford, Vernon Hill
Wash.	Permit	Yes	Yes	Martin Peterson, Bow	Mrs. E. B. Purchase, Wapato
W. Va.	Cert.	Yes	Yes	O. M. Dick, Inwood	E. J. Harner, Martinsburg
Wisc.	Permit	Yes	Yes	John F. Long, Madison	Mrs. Rose Kehl, Watertown
Wyo.	Cert.	Yes	Yes	Walter Patch, Cheyenne	Walter M. Fliegner, Riverton

UNITED STATES DEPARTMENT OF AGRICULTURE – Entomology Research Division, E. F. Knipling, Director, Beltsville, Md.; BEE CULTURE INVESTIGATIONS – Dr. Clayton L. Farrar, Investigations' Leader, Univ. of Wisconsin, Madison. U. S. BEE CULTURE LABORATORIES: Univ. of Wisconsin, Madison; Univ. of Arizona, Tucson, Frank E. Todd; Univ. of Louisiana, Baton Rouge, Warren Whitcomb, Jr.; Agricultural Research Center, Beltsville, A. S. Michael; Utah State Univ., Logan, George E. Bohart; Univ. of Wyoming, Laramie, John D. Hitchcock.

UNITED STATES MARKETING AID – U. S. Department of Agriculture, Washington, D. C.; MARKET DEVELOPMENT PROGRAMS, Specialty Crops Branch, Fruit and Vegetable Division, Agricultural Marketing Service, Marvin W. Webster; PRICE SUPPORT PROGRAM, Wage Price & Commodity Programs Branch, Sugar Division, Commodity Stabilization Service, A. A. Greenwood.

CANADA DEPARTMENT OF AGRICULTURE ENTOMOLOGY RESEARCH INSTITUTE, APICULTURE SECTION, CENTRAL EXPERIMENTAL FARM, OTTAWA. No chairman has been appointed.

APIARY INSPECTORS OF AMERICA – President, S. E. Bailey, Columbus, Ohio; Secretary, John F. Long, Madison, Wisconsin.

AMERICAN BEEKEEPING FEDERATION – President, Henry Hansen, Dakota City, Iowa; Vice President, George Walker, Jr., Pharr, Texas; Sec.-Treas., Joseph Moffett, Fort Collins, Colorado.

LADIES' AUXILIARY OF AMERICAN BEEKEEPING FEDERATION – President, Mrs. Harold Partello, Boone, Iowa; Vice President, Mrs. L. R. Budge, Malad, Idaho; Sec.-Treas., Mrs. Clayton H. Adee, Kearney, Nebraska.

BEE INDUSTRIES ASSOCIATION – President, John Root, Medina, Ohio; Treasurer, Ralph Stone, South Gate, California; Secretary, Charles Dadant, Hamilton, Illinois.

SOUTHERN STATES BEEKEEPERS' FEDERATION – President, Neal Miller, Jr., Safford, Alabama; Vice Pres., Roy Weaver, Jr., Navasota, Texas; Sec.-Treas., Homer Tate, State College, Miss.

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AMERICAN BEE BREEDERS' ASSOCIATION – President, Lawrence Cutts, Chipley, Florida; Vice President, Louis Harbin, Mobile, Alabama; Sec.-Treas., Garnett Puett, Hahira, Georgia.

AMERICAN HONEY INSTITUTE – Director, Mrs. Harriett M. Grace, Madison, Wisconsin; Chairman of the Board, Baxter Woodman, Grand Rapids, Michigan.

NATIONAL HONEY PACKERS AND DEALERS' ASSOCIATION – Pres., Wendell Shore, South Gate, Calif.; Vice Pres., Robert L. Steele, Sioux City, Iowa; Sec.-Treas., Irvin A. Stoller, Latty, Ohio; Ass't. Sec.-Treas., Harold J. Clay, Washington, D. C.; Directors are: Wendell Shore, Robert J. Steele, Irvin A. Stoller, R. B. Willson, Edward Burleson, David K. McGinnis, and Ken Bradshaw.

HONEY INDUSTRY COUNCIL OF AMERICA – Chairman, Wendell Shore, South Gate, California; Vice Chairman, John Root, Medina, Ohio; Secretary, L. H. Little, Shelbyville, Tennessee.

ROYAL JELLY RESEARCH FOUNDATION – Chairman, R. B. Willson, New York City, N. Y.; Secretary, George F. Hohmann, Napa, California; Treasurer, Leslie H. Little, Shelbyville, Tenn.

1961 NATIONAL HONEY QUEEN – Elaine Prather, Woodland Mills, Tennessee.

STATE OR PROVINCE	BEEKEEP'G. TAUGHT IN AGRI. COL.	ANNUAL SHORT COURSE	PROFESSOR IN CHARGE OF BEEKEEPING COURSE	EXTENSION WORK CARRIED ON	EXTENSION PERSONNEL IN BEEKEEPING
Ala.	Yes		F. E. Guyton, Auburn	No	
Alta.	No	Yes		Yes	J. W. Edmunds, Edmonton
Ariz.	Yes		Frank E. Todd, Tucson	Yes	Dr. J. N. Roney, Phoenix
Ark.	No			Some	
B. C.	Some			Yes	John Corner, Vernon
Calif.	Yes		J. Eckert & H. Laidlaw, Davis	Some	J. E. Eckert, Davis (Acting)
Colo.	Yes		W. T. Wilson, Fort Colins	No	
Conn.	No			No	
Del.	No			Yes	D. F. Bray, Newark
Fla.	Yes		Milledge Murphey, Gainesville	Yes	John D. Haynie, Gainesville
Ga.	No			No	
Idaho	Yes		Dr. H. C. Manis, Moscow	Yes	Roland Portmend, Moscow
Ills.	Yes		V. G. Milum, Urbana	No	
Ind.	Yes		B. E. Montgomery, Lafayette	Yes	B. E. Montgomery, Lafayette
Iowa	Yes	Yes	Dr. Walter Rothenbuhler, Ames	Yes	Dr. Robert Moorman, Ames
Kans.	Yes		R. B. Boren, Manhattan	Yes	R. B. Boren, Manhattan
Ky.	No			No	
La.	Yes		W. Whitcomb, Baton Rouge	No	
Me.	No			No	
Man.	Yes		D. R. Robertson, Winnipeg	Yes	D. R. Robertson, Winnipeg
Md.	Yes		George J. Abrams, College Park	Yes	George J. Abrams, College Park
Mass.	Yes		Dr. Frank R. Shaw, Amherst	No	
Mich.	Yes		E. C. Martin, East Lansing	Yes	E. C. Martin, East Lansing
Minn.	Yes	Yes	M. H. Haydak, St. Paul	No	
Miss.	Yes		C. A. Wilson, State College	Some	David F. Young, State College
Mo.	Yes	Yes	Dr. Curtis Wingo, Columbia	Yes	Dr. Curtis Wingo, Columbia
Mont.	No			No	
Nebr.	Yes		C. J. Walstrom, Lincoln	No	
Nev.	No			No	
N. B.	No			No	Vacant
N. H.	Yes		Dr. Wm. R. Lee, Durham	No	
N. J.	Yes		R. S. Filmer, New Brunswick	Yes	R. S. Filmer, New Brunswick
N. M.	No			No	
N. Y.	Yes		Dr. E. J. Dyce, Ithaca	Yes	Dr. Roger Morse, Ithaca
N. C.	Yes		W. A. Stephen, Raleigh	Yes	W. A. Stephen, Raleigh
N. D.	Yes		David M. Noetzel, Fargo	Some	W. J. Colberg, Fargo
N. S.	Yes		E. A. Karmo, Truro	Yes	E. A. Karmo, Truro
Ohio	Yes		W. E. Dunham, Columbus	Yes	Chas. A. Reese, Columbus
Okla.	Yes		G. A. Bieberdorf, Stillwater	No	
Ont.	Yes		G. F. Townsend, Guelph	Yes	G. Townsend & P. Burke,
Oreg.	No			No	
Pa.	Yes	Yes	E. J. Anderson, Univ. Park	Yes	W. W. Clarke, Jr., Univ. Park
P. E. I.	No			Some	Dave MacLean, Charlottetown
Que.	Yes		H. J. Plourde, Quebec	Yes	Rene Brasseur, Montreal
R. I.	No			No	
Sask.	Yes		Dr. S. H. Nelson, Saskatoon	Yes	D. M. McCutcheon & S. Bland
S. C.	Yes		W. H. Purser, Clemson	Yes	L. M. Sparks, Clemson
S. D.	Yes		R. J. Walstrom, Brookings	No	
Tenn.	No			No	
Texas	No			No	
Utah	Yes		Marshall D. Levin, Logan	No	
Vt.	No			Some	Dr. Geo. MacCollom, Burlington
Va.	Yes		John M. Amos, Blacksburg	Yes	John M. Amos, Blacksburg
Wash.	Yes		Dr. Carl Johansen, Pullman	Yes	Dr. Carl Johansen, Pullman
W. Va.	No			No	
Wisc.	Yes		Dr. C. L. Farrar, Madison	No	
Wyo.	No			No	

Note: Where we did not hear from a state we repeated last year's listing.

Live and Learn

PROPOLIS PETE

ABOUT A YEAR AGO I devoted one of these pages to a discussion on the variability, or, if you prefer, the cussedness of bees. The inspiration for the subject was the fact that nearly everybody but me has had success in building up colonies through the use of pollen substitutes in locations where there is a scarcity of early pollen. For years I have put out a small quantity of a substitute, and the bees just simply did not pay any attention to it.

Last year, for some reason known only to the bees, they went mad over it. I thought that I had found the answer. Prior to last year I had noticed that bees seemed to like to fly a bit before they went to work. For instance when I put out a waterer for them, right alongside the hives, they ignored it. With a supply of water not 10 feet away, they would fly up to a neighbor's dog's water pan, much to the discomfiture of the dog, and to my neighbor's peace of mind.

I began to get a glimmer of my theory when I built a fish pool near the the house. Previously I had tried all kinds of gadgets to get the bees to take water, but with no success whatever. I tried a chicken waterer with some pebbles for the bees to stand on. I even rigged up an elaborate contraption with a five gallon can with a hole in the bottom, and the hole plugged with a rag. The idea was that the rag would get wet, and at the same time plug the hole so that the water would not all run out. This idea was almost successful. A few bees did make a habit of going to it. I didn't build the fish pool to help the bees, but for the joy of watching the fish grow, and the pollywogs change into frogs. But the bees sure took over, and ever since I built it, it has been their favorite watering spot, much to the consternation of visitors.

The important point was that the bees ignored the watering spots near the hives and flew the couple of hundred feet to the fish pond.

Last year, I put out a sample of soy flour for the bees right on top of one of the hives in the row, and not a bee could be seen even sniffing at it. But I did notice a few bees trying to work the dust in one of the bird feeders. It probably had some corn flour in it. This also was about 200 feet from the hives. So just for curiosity, I moved the little dish of soy flour down alongside of the bird feeder and they went for it like chow call in the army. I put out a bigger pan full of it, and the more flour I put out, the more bees came to get it. Within a couple of days, they were taking down a good quart measure full every day. Very soon after this, pollen was available in the fields, and again they ignored the soy flour. But it seemed to confirm my theory that they like to fly a bit before going to work.

Last week, the weather seemed to be warming up. Plenty of bees were flying, and when a crocus blossom opened up, sometimes half a dozen bees tried to get inside at once. A blossom still closed, but about ready to open had a couple of bees sitting on it waiting for it to open. The first of the pussy willows is starting to produce pollen, and there are bees hovering around them too, waiting for them to open. So I figured that the time was ripe to prove my theory, and I put out a pan full of flour. They aren't having any.

It all sounds baffling and complicated, but the reason could very well be simple. We have a good fall supply of pollen. I have even seen bees working broccoli up to Thanksgiving Day. Maybe the reason they don't take the flour is because they don't particularly like it, and as long as they have pollen in the combs from last fall, they don't want a substitute. Nobody claims that artificial pollen is as good as natural pollen, in fact I don't think that anybody claims that all pollens have the same nutritional value. So it might be that the bees in their natural wisdom, use first their own stores, and then if they are desperately short, anything they can get.

I'll know for sure pretty soon. In about a week I should be getting my

(Continued on page 313)

Let's Talk About HONEY PLANTS

DR. HARVEY B. LOVELL
University of Louisville,
Louisville, Ky.

SAFFLOWER (**Carthamnus tinctorius**): Dr. J. E. Eckert at Davis, California writes that safflower honey is light amber to amber and has a pungent odor when freshly gathered, but this odor disappears when the honey is ripe. The flavor is strong but well liked by many in preference to the mild flavor of snow white honeys. Beekeepers in parts of California report averages of 30 pounds more or less. The honey is dark enough to damage the white honeys of alfalfa and star thistle when mixed with them.

Arizona. Leonard H. Hines of Tucson reports that an increasing amount of safflower is being planted there and bees are working it freely.

Safflower is grown as a source of oil which is extracted from the seeds. It has been found adapted to elevations of 3000 feet or higher in dry climates. Cloudy or wet weather during flowering are unfavorable to seed set and limit the regions where it can be grown.

Frank Pellett wrote (**Am. Bee J.** April, 1950): "Safflower is one of the new crops which promises to be permanent in Nebraska, New Mexico, and other western states. In our test gardens the bees worked it heavily and were apparently getting good loads of nectar."

Later Pellett wrote (**A. B. J.** July, 1951): "We are very much in the dark about the value of safflower for bees. In the test garden the bees worked it heavily and apparently were getting good loads of nectar. From California comes a report of a heavy yield of both pollen and nectar from this source. On the other hand a field of safflowers in bloom in western Washington last year failed to show any bees on the flowers. A local beekeeper said his bees paid no attention to it. A similar report comes from a Nebraska beeman located near a big field. It is evidently a temperamental plant which yields heavily at times and at others not at all. There is an increasing acreage of safflower planted in the west."

Dried honey. The U.S.D.A. has devised a process for drying honey which gives the bakers and candy makers an opportunity to use honey as a sweetener with greater ease than ever before. When water is added, the dried honey has nearly its original flavor. This should increase the use of honey by bakers. It can also be used in packaging baking mixes. Honey adds to the flavor and keeping qualities of bakery goods.

I have before me an advertisement of honeys from the New York Times. There are 50 kinds from the United State of which 10 are from California, five from Florida, and three from Texas. There are 30 kinds from foreign countries, mostly from Europe.

Among the more unusual flavors are holly from Arkansas, lima bean from California, mango from Florida, spearmint from Indiana, blueberry from Maine, blackberry from Oklahoma, cranberry from Massachusetts, marigold from New Jersey, pine honeydew from North Carolina, wild privet from Virginia, and whitebrush from Texas. Every region has its characteristic honey plants which will yield a surplus if the local beekeepers are alert to their possibilities and have their bees ready at the proper time. More money can be obtained for honey if the floral source is indicated on the label. This may involve moving your bees to the area where the species of plant is abundant, putting on fresh supers and removing them as soon as the plant goes out of bloom.

Mrs. Partello shows her daughter Susan how to arrange a tray of honey cookies.

Mrs. Partello's Rye Bread Recipe

SINCE Mrs. Herald Partello's story appeared in the December 1960 issue of Gleanings, we have received many requests for her rye bread recipe.

Mrs. Partello has generously given us permission to print the recipe so we may share it with our readers.

Helen states that she is a "pinch of this and handful of that" cook. She says, "I don't claim to be an expert cook or anything like that. I have had no special training other than 20 years of married life and cooking for my family."

Now we ask you, what better experience could qualify Mrs. Partello for being a "honey of a cook"?

1 Package Dry Yeast
2½ Cups Lukewarm Water
1 Heaping Tablespoon Shortening
¼ Cup of Honey
3 Level Teaspoons Salt
2 Cups Rye Flour
4 Cups White Flour

Put the lukewarm water in a large bowl. Sprinkle the yeast on top to soften. While this is going on, melt the shortening, then add melted shortening, honey and salt to the softened yeast and stir well. To this add the two cups of rye flour and one cup white flour. (You can deviate sometimes and instead of two cups rye and one white, use three cups rye.) After this add two of the remaining cups of flour and mix. When all the flour is mixed in good, put the last or fourth cup of white flour on your bread board and knead it into the dough. If you use round cups of flour instead of level cups you may not need every bit of the last cup in. Go by the feel of the dough. It should be soft and light. Too much flour makes it tough and heavy. Only through practice will this come to you so don't quit if you don't succeed the first time. After you have finished with this, form the dough into a ball and place it in a greased bowl to rise. Cover the bowl and let it rise until double in bulk which takes around an hour. When it has doubled, punch it down to get rid of the gas formed by the yeast and let rise again until doubled. Put dough back on bread board and divide into two loaves. Knead a few strokes. Shape into loaves and put into greased pans to rise until doubled again. Bake in a 350°F. oven 30 minutes. Then turn oven down to 300°F. and continue baking for 30 minutes more.

This bread freezes well and when using this bread from your freezer wrap it in foil and put it in a slow oven just long enough to warm it through and then serve. It should be sliced before warming, as hot bread is hard to slice without it crumbling.

Honey Raisin Coffee Cake.—Photo courtesy of Quaker Oats Company.

It's a Honey

MRS. BENJ. NIELSEN
Aurora, Nebraska

WHENEVER WE HEAR the phrase "It's a Honey" we know immediately that it is a seal of approval. So we say of this coffee cake, "It's a honey!" — and you know that you can expect a treat. The description for Honey Raisin Coffee Cake has a double meaning, for honey actually plays a very important part in both cake and topping. In the topping it combines with goodies such as nuts and raisins for a topping designed to please every sweet tooth in the family. The speedy way you prepare this coffee cake will also bring out the same exclamation. Pancake ready-mix, as one of the basic ingredients, eliminates several steps in mixing and measuring and means that this luscious coffee cake can be oven ready in just a few minutes. Try Honey Raisin Coffee Cake on your family soon. They will call you "a honey" for giving them such a treat! And, whichever you choose — one, two or three — "It's a Honey"!

Honey Raisin Coffee Cake

Topping: One-half cup honey, ½ cup chopped nutmeats, ⅓ cup melted but-

(Continued on page 313)

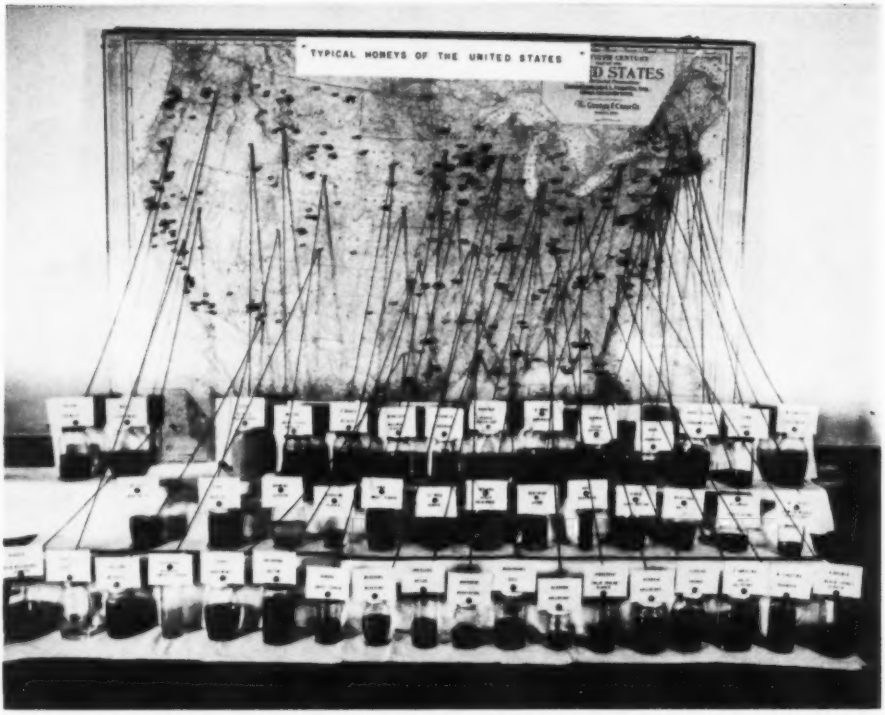


Exhibit shows typical honey samples from 45 states. Each dot on the map represents one honey sample analyzed.—USDA Photo by M. C. Audsley.

A Survey of American Honeys

Number seven in a series of ten articles on the different honeys of America.

7. Relation of Color to Composition [1/]

JONATHAN W. WHITE, JR.
Eastern Regional Research Laboratory
Eastern Utilization Research and Development Division
Agricultural Research Service, United States Department of Agriculture
Philadelphia 18, Pennsylvania

1/ This is one in a series of articles describing a large-scale study of the composition of honeys from over the United States. Complete data interpretation and conclusions will appear in a forthcoming Department of Agriculture publication.

COLOR OF HONEY is its most quickly noted characteristic, and it has long been used to form quick opinions of its other characteristics. Many believe that the strength (or desirability?) of flavor can be inferred from its color. It is known that some analytical characteristics of honey vary with its color. Schuette and his colleagues at Wisconsin found that the darker honeys are richer in ash, potassium, sodium, magnesium, iron, copper, manganese, chlorine and sulfur. They also found that enzyme contents of dark honeys are higher than of light honeys.

Honeys Grouped According to Color

In our recently concluded analytical survey of American honey, we grouped all honey samples into 13 color groups, representing the light and dark halves of the seven USDA color classes for honey. As was done for the granulation data, described in the preceding article in this series, code numbers from 0 to 12 were assigned to the groups, ranging from "0" for the light part of water white to "12" for dark. All analyses were then grouped and averaged, to give the average analysis for all honeys falling in each of the color groups. These averages were examined for trends and statistical analysis was used to find out if the trends that appeared to be present were actually significant.

Significant Differences Between Light and Dark Honeys

When this was done, many of the compositional factors were found to change in a regular way when darker honeys were studied. As we progress from light to darker groups of honey samples, the following factors decrease, i.e. they are higher in light than in dark honey (all are listed in order of decreasing significance[2/]):

Sucrose
Lactone/Acid Ratio
Dextrose
Active Acidity
Levulose
Granulating Tendency

These composition factors were found to be higher in darker honeys than in lighter:

Total Acid
Free Acid
Nitrogen
Ash
Undetermined Material
Maltose

This is further substantiation of the fact that darker honeys are richer in minerals (ash) than lighter ones. They are also much higher in total acidity, but are lower in dextrose and levulose and have a lessened tendency to granulate.

Color of Honey Over the United States

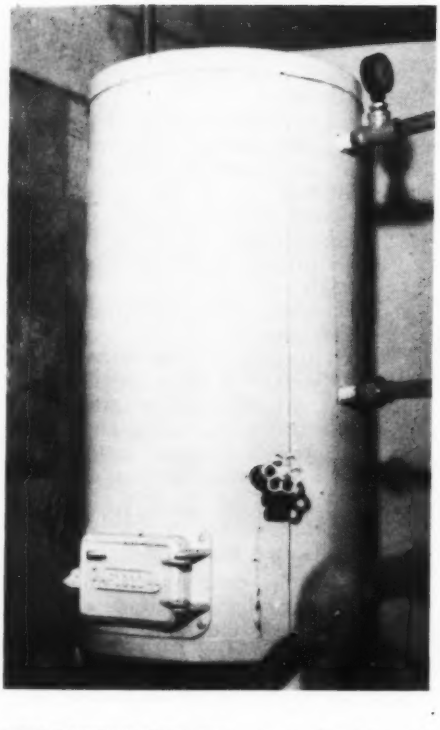
Recently an exhibit was made up showing typical honey samples arranged with a map of the United States. It could be seen that honey of the East and South was darker and that as one went westward, honey lightened considerably. This is not a new observation, but it is of interest that when all of our honey samples were classified by state of origin and further by area of the United States, this was again shown. This may be seen by the following values. Here the code numbers for color were averaged. Whether this procedure would give the same value for color as would be obtained by blending the samples is debatable, but we feel that it gives a good approximation.

Thus, honey from the East and South in general is darker than the national average while that from the north central and intermountain area is lighter.

(Next month: - Effect of storage on honey sugars.)

2/ All factors shown gave F values in the analysis of variance for regression exceeding the critical value for the 1% probability level.

Area	No. of Samples	Average Color
North Atlantic States	82	Light half Ex. Light Amber
East North Central	47	Light half White
West North Central	63	Light half White
South Atlantic	86	Dark half Ex. Light Amber
South Central	68	Light half Ex. Light Amber
Intermountain West	52	Light half Extra White
West	104	Dark half White
All samples	502	Dark half White



I Made A Flash Heater For Honey

Secondhand water heater makes an inexpensive flash heater worth $500.

CHARLES HINCKLEY
Marion, Ohio

"REMEMBER TO start slowly and carefully and don't get too many colonies at first". This was the advice of many when I first started in beekeeping. I was very enthusiastic and anxious to get going, so to speak. But the same warning continued to be given by all my friends. So I bought and started reading the ABC and XYZ of Bee Culture. The same admonition was received from this source. I have always been a person to listen and weigh carefully all information before disregarding or accepting it. I believe all of my advisors were honest and not just trying to exploit their knowledge.

Well, beginner's luck was with me. The first year's crop was very good. Now to market the product. This was a real problem. It seemed as though all the retail dealers had honey for sale and the only retail outlet I had was in supplying my friends. I studied further. I learned that much equipment is needed to prepare honey for market. I wanted my honey to be top quality so that I could realize as much profit as possible. I also needed to control granulation on the grocer's shelf. I had neither the equipment nor the funds for such a large investment, and it would hardly be a paying proposition for the quantity of honey that I had for sale. I tried heating the honey in a large kettle, but it would darken when brought to a temperature that would control granulation.

A flash heater and a boiler seemed the solution to the problem, but this would take up much space which I did not have available. Another problem was the amount of honey that would be needed to fill the pipes and tubes of such a large installation. I was just not able to find equipment of a size to be practical for a small producer. I studied the situation for some time and this was my solution: I found a good automatic gas water heater at one of the plumbing shops that had been removed during remodeling. This I purchased for two dollars. I first removed the cover and cut the outside covering with a chisel, about four inches from the top and this gave me access to the top of the tank. I removed the insulation and then used an acetylene burner to cut the top from the tank. The cen-

ter vent was burned off about three inches above the line of the tank, cut so that it could be used for venting when the tank was completed.

I used a wire brush on the tank first and then filled it with water and a rust-solvent. After standing for 24 hours it was rinsed with clean water and was ready for use.

On the opposite side of the gas inlet, I drilled two ⅜" holes, one about four inches from the bottom of the tank and the other about three inches from the top. Using a little heat and a tapered punch I enlarged these openings to the correct size for a ½" pipe tap, threaded them and was ready to insert a nipple with an extra long thread on one end. Using a good non-hardening gasket cement for a seal, I then turned a lock-nut on the nipple in the inside of the tank.

This gave greater rigidity to the nipple. The tank was 14 inches in diameter on the inside, so I could use about 40 inches of tubing to each coil. I could use 14 coils as I had 16 inches from the bottom nipple to the top nipple. This would allow about 50 feet of tubing for the coil inside the tank. I purchased this tubing made in a coil of the right size. This saved me many problems as I did not have the equipment to make the tubing into a coil of the right size. With copper fittings and silver solder, I connected the coil to the nipples. The coil was spaced so that water could flow freely between the coils and they were not allowed to touch in any place. To test the finished product for leaks I filled the tank with water and attached an air hose to the nipple and closed the other nipple with a plug. No air bubbles, no leak. We are now ready for installation.

The tank was placed in the space that I had planned, close to the gas line and only a few inches from the pump on one side, and the filter on the other. I tested the thermostat and found that it worked very well. It was adjustable from 140 degrees to 180 degrees. After all connections were made, I started to pump honey through the heater. I soon learned that it was best to set the thermostat above 160 degrees so that I could speed the flow of honey through the coils. A thermometer in the line from the heater made it easy to keep control at all times. Although I used a gas heater, an electric water heater would work equally as well. The cost of the flash heater was less than $25.00 plus my labor.

I have a neat compact piece of equipment that also provides me with plenty of hot water for cleaning purposes when I am through processing and bottling.

I soon found a market for my honey as I could meet competition and my honey did not granulate on the grocer's shelf. It has been paid for many times in the 18 months that I have used it. Over four tons of honey have been processed through this heater and it is as good as the day I first used it. I am firmly convinced that sometimes it is necessary to devise ways to do some things within my own economic ability.

Many Towns Named After Bees and Honey

ROBERT J. WYNDHAM
Upland, California

PERHAPS NO WAY of making a living gets so much in a man's blood as beekeeping. The fact that so many towns have the word "bee" or "honey" in their names seems to bear this out.

In England we find:

- Honnington and Honiley in Warwickshire
- Honington in Suffolk
- Honeydon in Bedfordshire
- Honeybourne and Honeybrook in Worcestershire
- Beobridge in Shropshire ("beo" meant bee in the Saxon language)

In our country we find:

- Honey, Mississippi
- Honey, North Carolina
- Honey Hill, South Carolina
- Honey Bend and Honey Creek, Ill.
- Honeybrook and Honeygrove, Pa.
- Honeycreek, Indiana
- Honey Creek, Oregon
- Honeycreek, Wisconsin
- Honeyford, North Dakota
- Honeygrove and Beeville, Texas

(Continued on page 311)

Beekeeping as a Hobby

If you have a problem in storing your bee equipment then here is a good solution for you.

S. E. BLAND
Ass't. Provincial Apiarist
Regina, Sask., Canada

MANY PEOPLE keep bees as a hobby. Why? Perhaps the beekeepers themselves would find it difficult to explain. I like to think that beekeeping helps to satisfy an affinity between man and nature that has existed for eons. In his apiary the beekeeper is able to escape briefly from the maelstrom of mechanization.

Some urban beekeepers keep their bees in the city. Others, although they live in the city, prefer to keep their bees in the country. Living in the city and beekeeping in the country sometimes presents difficulties. Veil, smoker, hive tool and supers of comb must be loaded into the car when going out to tend bees. Often one arrives at the apiary only to find that something has been forgotten or that supers of comb are not required and must be returned to headquarters in the city.

Mr. Vic Beck, Regina, Saskatchewan, who keeps bees as a hobby has made his beekeeping more pleasant and enjoyable by making his outapiary in the country his beekeeping headquarters. His extracting headquarters is still the basement of his home but supers, hive appurtanences and tools are all stored at the apiary ready for use when needed.

Storing Equipment at Outyard

Beekeeping equipment represents a considerable outlay of money. Given a little care, however, boxes, bottom boards, covers and even the honey combs remain useful and valuable for years. Good equipment, well painted and kept in repair gives more satisfaction to the beekeeper. The bees will be easier to handle and less likely to be cross if kept in good equipment. Bee equipment, regardless of where it is kept, deserves good storage. Vic has constructed a cheap bee-tight plywood case at the apiary site in which to store his equipment. Eight feet long, four feet wide and four feet high, the case is constructed of ¼" plywood except for the floor. The floor is ½" plywood on a 2" x 2" frame with three 2" x 6" skids to keep the floor off the ground. The 2" x 6" skids are placed one at each end and one in the centre. The balance of the framing is 1" x 2" strips. The front of the case is 2" higher than the rear to give the roof a slope and shed the rain.

After killing the bees in the fall, Vic stores all the bee equipment from his seven colonies in the case until it is needed next year. A case this size will hold approximately 40 supers. If nine foot plywood were used 48 supers could be stored. Vic moves his case on a trailer when necessary but the case could be constructed in sections so that it is collapsible and more easily moved. Perhaps you could use a similar case in your beekeeping?

Something New

DO YOU KNOW a youngster or a friend who is interested in bees but afraid to handle them? Or do you have a friend who is convalescing from an illness and has many hours of idle time? If so, the new Honeybee Hobby Hive is made to order.

This hive is a one frame observation affair being sold complete with bees and queen for $4.95 plus postage by The A. I. Root Company of Medina.

The hive differs from the convent onal type observation hive in that it does not have a removable frame. Instead it has a sheet of foundation suspended from the top to the bottom and the bees can be easily observed building comb.

The bees and queen are already hived when you receive it. All you have to do is set it in a window and open the entrance and give the bees a little sugar syrup to get them started.

The Hobby Hive is ideal for the young person who is interested in nature, also for the shut-in regardless of age and it will be handy for all biology classes.

Beekeepers can use these hives to their advantage in interesting other people in beekeeping and also in displays advertising honey.

For further information and literature write The A. I. Root Company, Medina, Ohio.

A Book Review

"Rose Recipes"

PLEASE DON'T EAT the daisies but help yourself to the roses! This is the idea you receive when you read Jean Gordon's book of Rose Recipes—customs—facts—and fancies.

Miss Gordon proves that roses are not only fragrant and lovely to look at. but they are also delicious and nutritious to eat. She has compiled a collection of 128 rose recipes and fascinating rose lore from 14 countries, beginning with 100 B.C. up to and including the present day.

It is amazing to learn how many ways parts of roses may be used in cooking .....everything from rose water for flavoring ice cream, candies, cakes and wines....rose petals for making jams and other condiments....to rose hips for making soups, conserves, etc. Rose hips are highly nutritious and especially rich in vitamin C. They contain from 10 to 60 times as much vitamin C as citrus fruits. Rose hips are the small berries that cover rose bushes after the flowers have withered.

Jean Gordon even tells of a delicacy called ROSE HONEY! Have you ever heard of it? She says it is popular in many countries, especially England and Turkey.

She includes many "rose 'n honey recipes in her collection. To learn how simple it is for one to blend ROSE HONEY, is worth the price of the book alone!

Once you've tasted this exquisite treat....you will have to agree with us....if there is anything sweeter than honey....it is a rose.

This book is published by Red Rose Publications, Woodstock, Vermont. The price for the paper bound edition is $1.50 and for the cloth bound edition, $2.95. Order your copy from: HOUSE OF ROSES, 244 Saint George Street, Saint Augustine, Florida.

Editor, Jack Deyell, examining a colony of bees.

M. J. DEYELL

A Talk To Beekeepers

IN PUTTING OUT this talk each month I am continuously confronted with the question of what will be most interesting to beekeepers everywhere.

Judging from the number of letters that have come in since the appearance of the recent articles on two queen colony management, it occurs to me that it might be apropos in this talk to give my experiences, which by the way, have been rather limited, in operating two queen colonies.

What gave me this idea was that on examining the March 1961 issue of

Canadian Bee Journal I came onto an article entitled "If At First You Don't Succeed --" by Mary Louise Britton.

According to the article, this beekeeper introduced the queen to three combs of brood also some combs of honey in a nucleus on top of a colony below with the queen. This nuc with the new queen being introduced was separated from the colony below by a double screen board.

In due time the nuc above was examined and found queenless, in fact the queen was found dead. Another queen was ordered and introduced in a similar manner and was later found dead. Not to be outdone a third queen was ordered and a similar casualty experienced.

It then occurred to the beekeeper that the reason for the non-acceptance of the queens introduced above was due to the nucleus above having the same colony odor as the colony below. The beekeeper then ordered a fourth queen and placed the nuc above with the queen being introduced, over a solid inner cover. The queen was accepted.

It would seem then that having the nuc above entirely shut off from the colony below, until the queen being introduced above is accepted, is very essential. It is then possible after the queen above is accepted, to have the nuc rest on a double screened inner cover so that the two queens cannot get together to fight. They could sting each other through a single screen. The heat generated by the colony below will help to keep the nuc above warm. It is necessary, of course, to have a small opening in the rim of the inner cover on which the nuc rests, to give the bees a chance to fly out and in.

Experience with Two Queen Colonies

This occurred during the season of 1955 and experiments were carried on in one of my apiaries six miles west of Medina. This small yard went into winter with a superabundance of honey and colonies came out in the spring, simply overflowing with bees. Ordinarily what we would call normal colonies have from four to six combs with brood about the middle of April. Some of the colonies in the experimental yard had brood in 12 combs the 24th of April. Something had to be done to prevent their reaching their peak of strength before the main honey flow came on. Dividing the colonies seemed to be the solution to the problem. And so, instead of placing the new division on another stand nearby, I simply raised four or five combs of sealed brood and young emerging bees into a super above a solid inner cover and introduced a young queen, making sure that the old queen was in the division below. I even shook some young bees from combs below, into the nucleus above, since some of the old bees would return to the hive below. A small opening in the rim of the inner cover was made, to serve as an entrance.

Two queen colonies after being united. It seems likely the young queens survived and the older ones were disposed of.

I used six strong colonies for this experiment. I lost only one queen and I couldn't account for her not being accepted. I should have said that I gave the nucs above two or three combs of honey each. These nucs with the new queens built up rapidly, in fact in a comparatively short time they had brood in six or seven combs and some of them built up to eight or nine combs of brood.

Divisions were made April 24. When the young queens were found to be laying above, I double screened the open-

ings in the center of the inner covers under the nucs. This gave the nucs a little more warmth. However, if the queen below is confined to the lower brood chamber by an excluder and if there are one or more supers on top of the queen excluder to separate the colony below and the nuc above, it isn't absolutely necessary to have the hole in the inner cover underneath the nuc double screened. A single screen will suffice, since the object of double screening is to keep the two queens apart.

During the time the divisions were building up it was necessary to give the lower division another super, also a shallow super was given to the nuc above.

On June 17, about the time the main honey flow was beginning, the two divisions were united, simply by removing the queen excluders separating the two queens.

I did not have the queens marked so do not know whether the older or younger queens survived. The uniting was done during a honey flow. It seems likely that the young queens survived and the older queens were disposed of.

I have never seen such populous colonies as those were. They simply could not all get into the hives. See the accompanying picture. And did they haul in the honey? They would fill up a shallow super in short order, in about three days.

I really should have weighed the surplus honey taken from those two queen colonies but failed to do so. I do know, however, that they put up a much larger crop than the single queen colonies.

There are at least three advantages in using the two queen system, it serves as a swarm control measure, it brings about requeening and a larger crop of surplus honey is secured.

Manipulating colonies by the two queen system does necessitate a little extra time and labor as well as careful hive manipulation but the comparatively small amount of extra labor is justified in the results obtained. It should be understood, however, that there is naturally a limit to the number of two queen colonies one person can operate. Those who have given the two queen system a thorough try-out seem to be of the opinion that it is possible to produce more honey with less hives or colonies of bees.

Swarm Control

Within the week we received a letter from a beekeeper in British Honduras who said that practically all of his colonies were intent on swarming. Some of them swarmed without building any queen cells. He did mention the fact that a few of his colonies headed by queens that he had imported were not so intent on swarming. It seems possible that the native bees he had, possessed a very strong propensity for swarming.

Some colonies may be intent on swarming regardless of control measures used. It is well that most colonies give advance notice of swarming, as the bees build queen cells along the lower edges of the brood combs. These cells are easily recognized because they are different from other cells. Instead of being horizontal, as are worker and drone cells, they are built in a vertical position with the openings at the lower end and resemble peanut shells.

When the cells are first started they resemble shallow cups. A little later on, as the sides of the cells are being built, each cell will be seen to contain an egg. A swarm will issue after the eggs have hatched and the larvae developed — usually at the time the first queen cell is capped. Sometimes during the spring months swarm cells may be started and then destroyed by the bees if the weather turns cool.

If A Swarm Comes Out, What Then?

The old method of handling a swarm was to put it into a hive on a new stand. A much better method is to set the old, or parent hive, on a new stand a few feet away, as soon as the swarm issues, giving the hive a quarter turn, thus facing the entrance away from the former position. Another hive containing either full sheets of foundation or drawn comb is placed on the old or parent stand to receive the swarm.

Frequently the swarm will cluster on the limb of a tree. Sometimes it clusters on a tall tree which causes the owner to do some tree climbing. The limb, if it is not too large, may be cut off and the bees shaken directly in front of the hive on the parent stand. If impossible to saw off the limb, the swarm may

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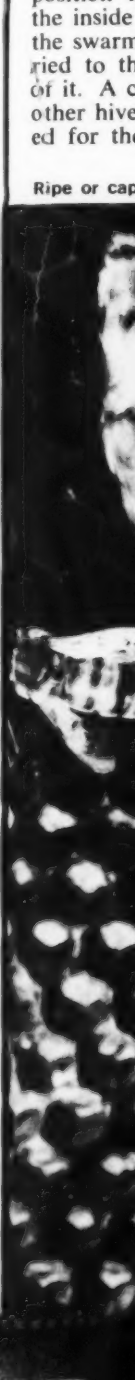

be shaken into a bushel basket with a wire wound around one of the handles so that after the bees are shaken into the basket, the handle may be wired to the limb of a tree until the swarm, including the bees in the air, have clustered on the inside of the basket. The basket hangs from the limb in such a position that the bees may cluster on the inside just below the handle. After the swarm has clustered it may be carried to the hive and dumped in front of it. A comb of brood taken from another hive and put into the hive intended for the swarm will attract the bees and cause them to get established readily in their new home.

It is an advantage to give colonies ample comb space which means putting on supers in order to avoid congestion in the hive which is said to be the main cause of swarming. Some beekeepers fail to put on supers in time, colonies become congested and start building cells in preparation for swarming. It is better to have colonies over-supered rather than under-supered, especially prior to the main honey flow when bees are building up to maximum strength.

Ripe or capped queen cells built at bottom of brood comb.

NEWS and EVENTS

IOWA
Beekeepers' Short Course
Ames, Iowa
May 9, and 10, 1961

The Iowa Beekeepers' Short Course will be held in Ames at the Memorial Union, Iowa State University, Ames, Iowa on May 9th and 10th.

Dr. Elwood Montgomery of the Department of Entomology, Purdue University will be guest speaker. Dr. Montgomery will certainly have many items of interest to bring us. Other portions of the program are being planned.

Be sure to be with us at the May Short Course and meeting. — Glen L. Stanley, Secretary.

KENTUCKY
Beekeepers' Association
Clarkson, Kentucky
May 30, 1961

The spring meeting of the Kentucky Beekeepers' Association will be held May 30 at the Walter T. Kelley plant on Highway 62 near Clarkson, Kentucky. Two out of town beekeeping authorities will appear on the program. A cordial invitation is extended to all. —Wm. G. Eaton, Ass't. Apiarist.

KANSAS
Northeastern Kansas Beekeepers' Assn.
Edwardsville, Kansas
June 4, 1961

We welcome all interested in beekeeping to meet with the Northeastern Kansas Beekeepers' Association, Sunday, June 4th, 2:30 p.m. at the home of Mr. and Mrs. L. C. Jones, 44 South 98th Street, Edwardsville, Kansas. This is approximately one and one-quarter miles south of Highways 24-40. The speaker will be a former queen breeder of Liberty, Missouri, Mr. Guy Deimer, who will discuss "One Story Beekeeping". This will be the first outdoor meeting of the season and we know you will want to plan to be there and learn for yourself. Refreshments will follow the meeting.—R. F. Ferguson, Association Editor.

MISSOURI
Eastern Mo. Beekeepers' Association
Weldon Springs, Missouri
May 28, 1961

The Eastern Missouri Beekeepers' Association will hold a Field Meet on May 28th at the Bush Wildlife Area, Weldon Springs, Missouri. Many interesting activities are planned for the day and everyone is invited.—Clyde E. Turnbaugh, Secretary

ESPERANTIST BEEKEEPERS
Universal Esperanto Association

According to a letter received from the General Secretary of the International Congress of Beekeeping, Madrid, Spain, 1961, the secretariat intends to hold a meeting of Esperantist Beekeepers (Beekeepers who speak Esperanto) during the Congress. Anyone interested is requested to communicate with the: General Secretary, 28th International Congress of Beekeeping, Calle de las Huertas num. 26, Madrid 14, Spain, or: Mr. Gaston Vidal, 58 Ave. des Landais, Clermont-Ferrand, Puy-de-Dome, France.—Joseph H. Murray.

OHIO
Cuyahoga County Beekeepers' Assn.

At a recent meeting of the Cuyahoga County Beekeeper' Association of Ohio the following officers were elected: O. Kosman, President; Dr. E. E. King, Vice President; Robert Stoop, Treasurer; June Creighton, Recording Secre-

tary. The next meeting will be held May 14 at the home of the President, 5835 Pearl Rd., Parma, Ohio.

MISSOURI
Midwestern Beekeepers' Association
Kansas City, Mo.
May 21, 1961

The Midwestern Beekeepers' Association will hold its regular monthly meeting at the Y.M.C.A. Building, 2017 Van Brunt, Kansas City, Missouri, 2:30 p.m., Sunday May 21, 1961. There will be a speaker and usual discussion. The subject, "Management and Swarm Control". Refreshments will be served. Everyone welcome.—James A. Worrel, Secretary.

NEW MEXICO
Beekeepers' Association
Announce Winter Meeting Early
Socorro, New Mexico
December 2, 1961

The New Mexico Beekeepers' Association has made an early announcement of their annual meeting this year so that folks will have plenty of time to plan ahead for it. The meeting will be held on Saturday, December 2nd, at Socorro, New Mexico. More details will appear as the meeting date draws closer. Beekeepers desiring further information now are asked to write to Mr. Ersel Edwards, President of the Association, at Los Lunas, New Mexico.

ILLINOIS
Cook-DuPage Beekeepers' Association
Chicago, Illinois
May 28, 1961

The Cook-DuPage Beekeepers will hold their first outdoor meeting Sunday, May 28 at St. Casimir Convent, located in a beautiful setting, at Marquette Road and Washtenaw Avenue, Chicago, Illinois, which is 6700 South and 2700 West. If weather is bad there is plenty of room indoors. Come and see how the Sisters at the Convent keep bees in the heart of Chicago.

Robert Stauble, a former New York State beekeeper, and now in charge of the apiary at St. Mary's Seminary, Techny, Illinois, will give a demonstration on, "Supering for the Honey Flow". You fellows and girls who want to produce a better honey crop this year had better come and listen to Bob. Any member of the family not wishing to listen to the program can stroll about the grounds. There will be a panel discussion so get busy and think up some good questions and give them to the panel. If you would be embarrassed to ask the question then write it out without signing your name if you prefer.

All interested in beekeeping from near and far come and relax before starting that hard summer work and you might by chance pick up a few new ideas. Mrs. Katherene Klebes, our hostess, says the members will serve the pot luck and the association, the coffee. Bring you own table service.—Ralph O. Klebes.

MASSACHUSETTS
Bristol County Beekeepers' Association
Segreganset, Massachusetts
May 21, 1961

On Sunday afternoon, May 21, 1961, at 3:00 p.m. the Bristol County Beekeepers' Association will hold its first summer session on the grounds of the Bristol County Agricultural School in Segreganset, Massachusetts.

We will have as our guest speakers, Frank S. Shaw, Prof. of Entomology and Beekeeping of the University of Massachusetts, who will deliver a lecture on "Processing and Grading Honey", and Mr. Milo R. Bacon, Chief Apiary Inspector of Massachusetts, who will lecture on "Diseases and Enemies of the Bees". We are very happy to have two such outstanding men at this meeting as their beekeeping knowledge has given many of our members in the past the desired uplift at the right time. A short intermission will follow the lectures after which our President, Mr. Stanley J. Maslanka, will preside over a short business meeting. There will be a demonstration on hiving a package of bees by Mr. Clarence C. Munroe who built us this hive at our first beekeeping lesson. An exciting moment of expectancy will heighten our meeting when a winner will be drawn who will take this hive and bees home with him. This meeting will conclude the 6th and last lesson of our free beekeeping school.

A large picnic area with tables and chairs will be set up for the convenience of those who wish to bring picnic basket lunches. Hot coffee will be furnished for all by the association planning committee. Do come, one and all, and

(Continued on page 309)

Obituaries

LENA VAIL

LENA VAIL of Main Street, Riverhead, Long Island, New York, beloved friend, member, and Assistant Treasurer of the Suffolk County Bee Club, member of the Eastern Apiculture Society and contest winner in Honey Cookery Contests in Suffolk County and Eastern Apiculture meetings passed away at 8:30 a.m. on Tuesday, April 4, 1961. Burial was in Aquebogue, Long Island on April 6, at 2:00 p.m.

Lena was the wife of Henry B. Vail, past-president and present Treasurer of the Suffolk County Bee Club and past vice-president of the Eastern Apiculture Society and a present bee supply dealer.

ROY STADEL 1890–1960

CONNECTICUT beekeepers throughout the state have learned with great sadness of the death of ROY STADEL, on November 15, 1960, after a long illness, in Durham, Connecticut. For many years Mr. Stadel was a resident of Southington, Connecticut, where he carried on his bee and honey business. He is survived by one son, Robert, of Seattle, Washington; a brother and two sisters, and several nieces and nephews.

For over 15 years he was a State Bee Inspector, and worked very closely with the Connecticut Agricultural Experiment Station in their experimental work in devising ways and means for the treatment and eradication of American Foulbrood. He was President of the Connecticut Beekeepers' Association for three years, Vice President for Hartford County, and a member of the Executive Board for many years. He was well known as always willing and anxious to help the beekeepers in every way possible in solving their local and statewide problems.

He was a charter member of the Eastern Apicultural Society, and its first Second Vice President. Although quiet by nature, he was well known among Eastern beekeepers as one who was ever ready to entertain his friends by playing his harmonica and violin for group singing and square dancing, as well as operating his famous "Dancing Dolls" for their entertainment.

His was truly a life of service to his fellow men, and its loss to his friends and the beekeepers throughout the eastern states will be keenly felt for many years to come.

RAYMOND GILLETTE 1892–1960

RAYMOND H. GILLETTE, of Watertown, Connecticut, passed away suddenly at his home, on November 9th, 1960. He was born in Watertown on November 28th, 1892, son of the late Frederick and Alice (Bull) Gillette. For many years he was employed as a millwright, but during that time carried on a thriving bee and honey business. He is survived by his wife, Elsie (Gibson) Gillette, two sons, Arthur and Sherwood, one daughter, Mrs. Marion King, a sister and nine grandchildren.

Mr. Gillette served as President of the Connecticut Beekeepers' Association for one term, and was Vice President for Litchfield County at the time of his death. He had been a bee supply dealer for more than 30 years. He was well known in the northwestern part of the state for his great interest in beekeeping, and his willingness to assist others in establishing themselves in the industry. He was a loyal friend, always interested in promoting the welfare of the Association, and willing to help all who applied to him for advice in solving their beekeeping problems.

Buy and Sell

Classified rates: 18¢ per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it) count as one word. Copy should be in by the 10th of the month, preceding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. HUBBARD APIARIES, ONSTED, MICHIGAN.

IOWA HONEY, one can or truck loads. RUSSELL D. SMALLEY, BEAVER, IOWA.

CLOVER extracted honey in sixties. ABRAM BRUBAKER, 1525 September Dr., LANCASTER, PA.

TUPELO, wild flower, alfalfa, or orange, in 60's. LANCASTER COUNTY DUTCH GOLD APIARIES, 910 State St., LANCASTER, PA.

HONEY—In any size container, also Mail Order Dealer for Bee Supplies. Write for prices. L. E. ALLEN, TIPTON, MICH.

FOR SALE—White clover and light amber goldenrod honey, in 60-lb. cans, truck or carload. CLOVERDALE HONEY CO., FREDONIA, NEW YORK.

SOUTH DAKOTA CLOVER HONEY, white to water white, low moisture content. Truck load lots in new cans. SCHMIDT HONEY FARMS, WINNER, SOUTH DAKOTA.

WHITE CLOVER HONEY in new sixties. WAHLS APIARIES, CHENOA, ILL.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE — We cannot guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED—All grades of extracted honey. Send sample and price. DEER CREEK HONEY FARMS, LONDON, OHIO.

CASH FOR BEESWAX. Write as to quantity and we will quote price. MUENCH-KREUZER CANDLE CO., INC., SYRACUSE, N. Y.

WANTED—White extracted or comb honey. Send sample. MILLERSPORT HONEY CO., MILLERSPORT, OHIO.

BEESWAX WANTED—Highest prices paid in cash or trade for bee supplies. THE A. I. ROOT CO., MEDINA, OHIO; COUNCIL BLUFFS, IOWA; SAN ANTONIO, TEXAS.

WRITE FOR SHIPPING TAGS and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. WALTER T. KELLEY CO., CLARKSON, KY.

WANTED—Buckwheat and light amber honey. EASTERN FOOD PRODUCTS, 421 Bedford Ave., BROOKLYN, N. Y.

HONEY WANTED for bottling, all types in drums, tins, trailer and car lots. Send samples each lot. Write: CHAS. E. FARRIS CO., 99 Hudson St., NEW YORK CITY. Est. since 1910.

WANTED—Honey in 60 pound cans, also beeswax any quantity. L. E. ALLEN, TIPTON, MICHIGAN.

ALL GRADES extracted honey wanted in both 60 pound cans and 600 pound drums. PRAIRIE VIEW HONEY CO., 12303 12th St., DETROIT 6, MICHIGAN.

WANTED, chunk comb and extracted honey. Mail sample and price. STOLLER HONEY FARMS, LATTY, OHIO.

WE RENDER cappings, old combs and buy your beeswax. Shipping tags sent on request. M. R. CARY CORP., GPO Box 818, SYRACUSE 1, NEW YORK.

WANTED — Chunk and extracted honey. Send sample and price. RONALD CULP, CIRCLEVILLE, OHIO.

WANTED—Honey and Beeswax. WALLY'S BEE ENTERPRISE, 4900 Morningside, SIOUX CITY, IOWA.

BEE SUPPLIES FOR SALE

WRITE FOR CATALOG—Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. HUBBARD APIARIES, Manufacturers of Beekeepers' Supplies and Comb Foundation, ONSTED, MICHIGAN.

THE BIGGEST Bee Supply Catalog published (64 pages) free for the asking. Listing many items not found in other catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

QUEENBEE PAINTING OUTFITS, $1.50. INTERLOOKERS, $3.00 postpaid. SOUTHWICK APIARIES, WABAN, MASS.

FREE CATALOG—Cypress bee hives and bee supplies. Save up to 40% on hives that last. MYERS CRAFT MANUFACTURING CO., BURGAW, NORTH CAROLINA.

No. 1 Hive Bodies, $2.00; No. 2 Hive Bodies, $1.75; Covers and Bottom boards, $1.10; Shallow Extracting Supers, $1.25; Hoffman Full Depth Frames (per hundred), $11.00. Catalog on request. HAGEN-LUNCEFORD MFG. & SUPPLY CO., 2500 N. 4th Street, COEUR D'ALENE, IDAHO.

BEFORE YOU SELL your honey or buy your honey containers see HUBBARD APIARIES, ONSTED, MICHIGAN.

Our beginner's book "HOW TO KEEP BEES AND SELL HONEY", 75¢ postpaid is what you need. Over 100 pages and 175 pictures make beekeeping easy and profitable from the start. WALTER T. KELLEY CO., CLARKSON, KY.

NEW CYPRESS BEE WARE 9⅝ supers, $1.05,, 6⅝ supers, 70¢, 5¾ super bottoms or covers, 60¢, telescope cover (without metal) 75¢. C. L. STONECYPHER, HOMERVILLE, GA.

$$$$ 9⅝ supers, $115.00 a hundred, 6⅝ supers, $90.00 a hundred, 9⅛ frames, $80.00 a thousand, 6⅜ frames, $70.00 a thousand. Write for a free catalog on many other money saving bee supplies. KEHM BROS. APIARIES, Rt. 1, Box 346, GRAND ISLAND, NEBR.

NEW EQUIPMENT for 300 hives. HARVEY STEVES, Rye Star Rt., Box 165, PUEBLO, COLORADO.

OVERSTOCKED on zinc queen excluders. Write for special price. HUBBARD APIARIES, ONSTED, MICHIGAN.

500 BEEWAY SECTIONS, best quality, $16.00, 5 pound Thin Super Foundation for above sections, $6.50. (100% Pure Beeswax). HUBBARD APIARIES, ONSTED, MICH.

100% PURE BEESWAX, the Genuine Bee Approved Comb Foundation. Rib-wired with hooks - Plain Medium Brood - Thin Super. Wooden Bee Supplies. Ask about our warehouse nearest you. These supplies are manufactured by us. Buy direct of factory. HUBBARD APIARIES, ONSTED, MICHIGAN.

USED EQUIPMENT FOR SALE

FOR SALE—80 ten-frame colonies Italian bees, complete with supers and equipment in first class shape. CARL OPSATA, BEMIDJI, MINNESOTA.

85 TWO STORY, 10 frame colonies, complete supers, extracting and miscellaneous equipment for sale. State inspected. Best offer. Write to GEORGE EICH, 333 Pine St., JOLIET, ILLINOIS.

FOR SALE – One 20-frame Simplicity extractor with capping plates. Also tanks and accessories. JOHN F. BUCHMAN, 292 Ella St., TIFFIN, OHIO.

125 COLONIES, lots extra equipment. Also well established honey packing-selling business. ROY MAYHEW, 1509 Oliver, BOWLING GREEN, KY.

FOUR COLONIES, 2-stories high, several supers, 2-frame extractor with motor, electric uncapping knife plus extra equipment, $85.00 complete. ARTHUR FRANKE, 9115 Capri Dr., BEDFORD, OHIO.

35 HIVES OF BEES, plus supers for sale. MARY ANN JOHNSON, 513 E. Third Street, SANDWICH, ILLINOIS, Phone: 4256.

SOLD MY HONEY PLANT and bees, now I offer at Oakland, Iowa, lots of good equipment for extracting and packing car lots of honey. Write me for list and low prices. Disabled by arthritis. JOE C. WEAVER, Rt. 3, SEGUIN, TEXAS.

75 COLONIES and equipment. JAY DESPINS, 235 E. Columbia Ave., BATTLE CREEK, MICH.

TEN, 2-STORY HIVES; also 50 supers. Inspected. JOE WATKINS, 2090 Myrtle Ave., COLUMBUS, OHIO.

FOR SALE—I have a few beehives and other equipment for sale. ALFRED BRIGGS, NEW SHARON, IOWA.

STAINLESS STEEL melting tank, settling tank, cutting table, like new. Other honey house items. MAYHEW HONEY FARMS, CLARKSON, KY.

FOR SALE

TWENTY ACRE TRACT, modern home, honey house with other buildings. 232 colonies bees, equipment. CARL HAAG, ALTON, IOWA.

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Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
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Oconomowoc, Wisconsin

"SWARMING STOPPED COLD"
95% Foolproof
No Gimmicks
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Bigger Crops - Better Beekeeping
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J. E. WING & SONS
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Our Specialty
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The SIXTY for the SIXTIES
Choice of
Successful Jobbers
THE CONNEAUT CAN CO.
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HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
W. F. STRAUB & CO.
5520 Northwest Highway Chicago 30, Ill.

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CARNIOL Booking marked. 2 3 pound p & TILLERY DU 2-8371,

ITALIAN 5 lb., $7.00 EFLAND, N

QUALITY 1st, each more $1.25 1st. Write WOODMAN LENA, S.

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BRIGHT lbs. w/q, BILLY SHE

18 COLO good condi up, or mak Street, WE

ITALIAN rush order 3 lbs., $5. MICHIGAN.

CAUCASI producers DELL & C

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BEEKEEP modern ap gressive co nia or So truck, or Write statin NORTHFIEL

SEEDS

HONEY request. PE

200 POU for price. MICHIGAN.

BEES AND QUEENS FOR SALE

WE USE ALL POSSIBLE CARE in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

FOR SALE - - - - - HALF OUR BEES. 3,000 one story 10-frame colonies. No AFB. Good condition - honey for winter - FOB central California. $6.50 each in lots of 500 or more. ART HARRISON, Box 602, LOS BANOS, CALIFORNIA.

CARNIOLAN and CAUCASIAN BEES for 1961. Booking queens, each $1.25, clipped and marked. 2 pound package with queen, $4.00. 3 pound package with queen, $5.00. LEWIS & TILLERY BEE CO., R. 3, Box 261, Phone DU 2-8371, GREENVILLE, ALABAMA.

ITALIAN and CARNIOLAN bees, 3 lb., $5.00; 5 lb., $7.00; Queens, $1.30. LUTHER PICKETT, EFLAND, N. C.

QUALITY ITALIAN QUEEN BEES—Until June 1st, each $1.35, 5 or more $1.30 each, 25 or more $1.25 each. Reduced prices after June 1st. Write for package bee prices. A. G. WOODMAN CO., GRAND RAPIDS, MICH. or LENA, S. C.

ITALIAN QUEENS, $1.50; STARLINE, $2.00. Write for quantity prices. April 1st, June 1st. No packages. S. J. HEAD, CROSETT, ARK.

BRIGHT ITALIANS – 3 lbs. w/q, $5.00; 2 lbs. w/q, $4.50, F.O.B.; Queens, $1.50 P.P. BILLY SHEPPARD, ABERDEEN, N. C.

18 COLONIES OF BEES. Inspected and in good condition. Plenty of stores. $10.00 and up, or make offer. F. C. WILES, 228 Prospect Street, WELLINGTON, OHIO.

ITALIAN BEES and QUEENS: Send us your rush orders. Queens, $1.35, 2 lbs., $4.25, 3 lbs., $5.25. HUBBARD APIARIES, ONSTED, MICHIGAN.

CAUCASIAN QUEENS, $1.25 ea. Extra good producers and gentle to handle. C. D. WARDELL & CO., Box 6226, PALESTINE, TEXAS.

12 HIVES Italian bees. G. W. QUINE, 5151 S.O.M. Center Rd., SOLON, OHIO.

BEES IN 10-FRAME hives, either one-story or two-story. How many do you want? PAUL ENGELHARDT, ANTWERP, N. Y.

250 10-frame hives of bees. D. P. GREEN, 1158 E. N. Y. Ave., DELAND, FLORIDA.

FOR SALE—22 2-story colonies in good condition. PETER BUBNOW, NEW MILFORD, O.

DARK ITALIANS: bred for honey production. Three-pound packages with queen, $4.75, extra queens, $1.20. HENRY LOEHR, CALDWELL, TEXAS.

POSITION WANTED

BEEKEEPER with short college course in modern apiculture, desires work with progressive commercial outfit in Florida, California or Southern States. Can operate car, truck, or light plane. References supplied. Write stating offer to: J. R. RIDEOUT, R.R. 2, NORTHFIELD, ONTARIO.

SEEDS

HONEY PLANTS our specialty. Catalog on request. PELLET GARDENS, ATLANTIC, IOWA.

200 POUNDS of Argentina rape seed. Write for price. HUBBARD APIARIES, ONSTED, MICHIGAN.

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PLASTIC FREEZER CONTAINERS – Square pints, $9.95; quarts, $15.00 per hundred, postpaid. Sample pint, 25¢. OXBORO, Box 7031 CF MINNEAPOLIS 11, MINN.

MISCELLANEOUS

BEES REMOVED from house or tree or hive without touching either house or bees. Bees will then move honey into hive. Save property, honey, and bees with my method. Send $2.00 for details. Satisfaction guaranteed. GEORGE HAWKINS, Rt. 1, LAWSON, MO.

RENDERING every day in our all new plant. All honey saved from cappings. Rendering slumgum and old combs. Write for free shipping tags and rates. HUBBARD APIARIES, ONSTED, MICHIGAN.

YEAR END bee supply and comb foundation prices now. Send list for best quotation. At once, shipment from our overstocked factory warehouse. Send us your rush orders for bees and queens – direct shipment from the Gulf States. Phone: HO 1-3481, HUBBARD APIARIES, ONSTED, MICHIGAN.

WANTED

LARGE BEE SUPPLY Manufacturer and Honey Processor wants Supply Dealers and Honey Buyers. Write for Catalog and Honey Prices. HUBBARD APIARIES, ONSTED, MICH.

WANTED: Good used extractor, 30 to 50 frames. State make and model. No junk. E. N. WHITE, BRUSH, COLORADO.

ROYAL JELLY

SUPER STRENGTH 100 mg. Royal Jelly capsules in bottles of 100 for $10.00. PRAIRIE VIEW HONEY CO., 12303 Twelfth St., DETROIT 6, MICHIGAN.

HELP WANTED

WANTED – Two men to work in our apiaries. Some experience essential. Five day work week. Top wages. SCHULTZ HONEY FARM, RIPON, WISCONSIN.

YOUNG MAN to help in honey production for season, Minnesota. ERVIN REINERT, TRACY, MINNESOTA.

MAGAZINES

THE SCOTTISH BEEKEEPER (The official organ of the Scottish Beekeepers' Association.) Scottish in character, international in appeal. Annual subscription $2 post free. Sample copy from ROBERT N. H. SKILLING, F.S.C.T., 87 King St., KILMARNOCK, AYSHIRE.

INDIAN BEE JOURNAL, know interesting facts concerning the honeybees of India. The only Bee Journal of India published in English. Subscription Rs. 12/- or Sh. 17/6d (Sterling) or $2.75 per year (INTERNATIONAL M.O.). Sample copy 2s. or 25 cents. Can be had from The Managing Editor, Indian Bee Journal, Naini Tal, U.P., India.

PROFIT AND HEALTH—Raise dairy goats. Learn how. Monthly magazine, $2 yearly; sample and information 25¢. DAIRY GOAT JOURNAL, COLUMBIA T3, MISSOURI.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription, $3.00. Box 189, SAN ANGELO, TEXAS.

BEE WORLD, the international journal of the Bee Research Association published monthly, contains the latest research reports on bees and beekeeping, and also Apicultural Abstracts. Bee World is $9.00 a year to non-members. but the B.R.A. membership subscription of $7.00 includes Bee World. B.R.A. members in America are served by the B.R.A. American Committee, and have their own Branch Library at O.A.C. Details free (or with specimen Bee World and new B.R.A. Handbook, 50 cents) from Apiculture Department, Ontario Agricultural College, Guelph, Ontario, Canada.

ARCHIV FUR BIENENKUNDE, International journal for Bee Culture and beekeeping economics. Founded in the fall of 1918. Oldest scientific bee journal in the world. Praised again and again for its decades of independent leadership through many endorsements and advice as a valuable source also for the practice. Yearly DM 5.50. Any aspiring beekeeping friend will receive a sample copy. BIENE-VERLAG, GIEBELBACHSTR, 19, LINDAU (B) GERMANY.

W. C. GRIFFITH'S APIARIES
(SUCCESSOR OF LESLIE LITTLE)
Italian Queens Royal Jelly
Booking Orders

1 - 24	$1.50 each
25 - 99	1.40 each
100 & up	1.30 each

4811 Abbay Dr. Nashville 11, Tenn.

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Grab hold! Every dollar you give brings new hope to cancer research. Fight cancer with a checkup and a check to CANCER, c/o your post office.

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(Continued from page 303)

help us enjoy the good things in life and living with your friends, the beekeepers. In case of rain, a special room in the building will be used for the lectures. —Mary V. Maslanka, Corres. Sec.

MINNESOTA

19th Annual Beekeepers' Short Course Held at University of Minnesota In Room 307, Coffey Hall St. Paul, Minnesota May 5-6, 1961

Friday, May 5

8:00 a.m. Registration
9:15 a.m. The Life of the Bee—M. H. Haydak
10:00 a.m. Relation of Beekeeper to the State and the Society—C. D. Floyd
11:00 a.m. Bees Need Pollen—M. H. Haydak
1:30 p.m. You Should Know Your Honey —M. H. Haydak
2:30 p.m. First Step in Beekeeping; Equipment, Assembly, Choice of Proper Site—C. D. Floyd
3:30 p.m. Value of Bees to Agriculture —M. H. Haydak

Friday Evening

7:00 p.m. "Living With the Bees" - A talk with colored slides.—Chas. S. Hofmann, Janesville, Minn.

Saturday, May 6

9:00 a.m. Spring and Early Summer Management—M. H. Haydak
10:00 a.m. Preparing for the Honey Flow and Taking Care of the Honey Crop —C. D. Floyd
11:00 a.m. Principles of Bee Diseases and Their Control—T. A. Gochnauer
1:30 p.m. Installing Packages, Handling Colonies in the Apiary—M. H. Haydak, C. D. Floyd

OHIO

Southwestern Ohio Beekeepers' Assn. Mason, Ohio May 20, 1961

The Southwestern Ohio Beekeepers' Association will have their spring meeting at W.L.W. Broadcasting Company at Everybody's Farm, Mason, Ohio, Saturday, May 20, 1961. The broadcast starts at 12:30 p.m., so be there at 12:00 o'clock noon. After the broadcast, we will have a pot-luck dinner picnic. Everybody's Farm furnishes the milk and the Association, the coffee. There will be a contest with prizes for cakes cooked with honey. The meeting will follow the dinner. Mr. Reese and Mr. Bailey, Extension Specialists, Apiculture; Mr. W. C. Tyree, County Agent, Hamilton County; Mr. Chas. K. Neal, Jr., Butler County; Mr. Berman Ross, Warren County; Mr. W. W. Hamilton, Clermont County and your bee inspectors for these counties will all be there.

You have always wanted to see a broadcast from Everybody's Farm. Meet The Conners and Bob Miller. Come out and meet all these people. There will be fun and frolic for all. —James W. Hutton, Vice President.

SAVE! SAVE! SAVE! SAVE! SAVE!
LOWEST PRICES ON CYPRESS BEE HIVES
LET US QUOTE ON YOUR NEEDS
— FREE CATALOG ON REQUEST —
MYERS CRAFT MFG. CO. Burgaw, N. C.

Those Good Dark Italian Queens
For more than 30 years they have been used by many large producers.
1 to 24 . . . $1.40 25 to 99 . . . $1.30 100 up . . . $1.25
We have bred only the one strain for 34 years.
Weaver Apiaries Navasota, Texas

25 cents for 8 - 9 oz.
of your honey in our plastic comb honey section
COBANA PROD. CO.
P.O. Box 214 Dearborn 1, Mich.

HOLLOPETER'S
Hardy Northern Italian Queens
June-November. Our 50th year
WHITE PINE BEE FARMS
Rockton, Pa.

RICH MOUNTAIN APIARIES
COSBY, TENNESSEE
Will this year offer the famous "LITTLE" strain of queens that they have been wholesaling to Little's Apiaries for the past several years.

Queens, 1-24	$1.35
25-50	1.25

3-BANDED ITALIAN BEES & QUEENS
Try Our Famous Strain of Bees & Queens

	Queens	2-lb. w/q	3-lb. w/q
1-25	$1.25	$4.25	$5.25
26-up	1.15	4.00	5.00

Queenless package, deduct price of queen. After May 15, deduct 40¢ from each package and 25¢ from each queen. Satisfaction guaranteed.
LUCEDALE APIARIES
Ph. WH 7-3286 Lucedale, Mississippi

Booking orders now.
Over 35 years a shipper.
Send for FREE Circulars.
BLUE BONNET APIARIES also HOME of AULT BEE FARMS
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CAUCASIAN BREEDER QUEENS
World-wide recognition for quality, production, gentleness and non-swarming. Fifteen years of breeding for breeding stock exclusively, no yellow. All breeders fully guaranteed. Air Mail $10 ea.
J. E. HASTINGS
Rt. 1, Box 192 HALLETTSVILLE, TEXAS

Keep Gleanings Coming

"My ad missed GLEANINGS" . . . .Don't let it happen to you

Remember — Our deadline is the 10th of the month.

Many of our thousands of readers wish they knew how to buy from you. The most inexpensive way to let them know is to advertise in Gleanings. For over 85 years Gleanings has been taking the work out of selling.

Be sure your "selling story" is in the next issue. Send for an advertiser's rate card today.

Gleanings in Bee Culture
Medina, Ohio

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MANY TOWNS NAMED AFTER BEES AND HONEY

(Continued from page 295)

Honey Island, Louisiana
Honey Lake, California
Honeyville, Oklahoma

Then there is Meadville, Pennsylvania (mead is the old word for honey wine).

Germany, Austria, Hungary and also the Slavic countries have a number of geographic names derived from bees and honey. The same goes for several regions in India and Africa.

In Bohemia are Biendorf, Bienenhof, Imigau, Immichen and Bienenthal. "Biene" and "Imme" are German words for bee. Also Zeidler and Zeidelwald. "Zeidler" means beekeeper in old German.

Germany has Immnitz in Saxony, Immenrode in Thueringen, Immenstadt in Bavaria, Immenhausen in Wuerttemberg, Immendingen in Baden, Immendorf near Cologne, Immbach and Immigrath near Duesseldorf.

In Switzerland we find Immensee, Immenfeld, Immenberg and Bienburg. The habit of naming towns after bees and honey goes back to antiquity. The Greek word for honey is "meli". So we find in Greece

Melitonus in Pontus
Melitaia in Thessaly
Melita on Sicily (now part of Italy)
Meliteria in Cappadocia
Melitassa in Illyria
Melissurgis in Macedonia

In the old days the Island of Malta was called Melita.

Would you ever have guessed that a town by the name of Dardanos (near the Strait of Dardanelles) is named "bee town"? "Darda" is the Turkish word for bee.

There is little doubt that there are many more geographical bee and honey names on the map.

ITALIAN BEES AND QUEENS
2-lbs. w/q ..$3.75 3-lbs. w/q ..$4.75
Extra queens 1.25
Deduct 40¢ from above prices after May 15.
Shipped P.P. or Express
RAYMOND McFARLING
Rt. 3, Box 325 Tupe'o, Miss.

Queens

Italians	1-24	25-99	100 up
2-lb. pkg. w/q	$4.00	$3.85	$3.75
3-lb. pkg. w/q	5.00	4.85	4.75
Nice large queens	1.15	1.10	1.00

Caucasians

Queens after May 20th, 95¢ each
Queens after June 1st, 75¢ each
To clip and paint queens, add 10¢ each queen.
To air mail queens, add 5¢ each queen.
Tested queens $3.00
Select tested queens 7.00
All queens are personally reared.
Your order appreciated.
Order 1 or 1000

Mitchell's Apiaries
Bunkie, La.

IT'S A FACT . . . .
Good queens often times correct poor locations, disease, and crop failure.
Money can't buy a better queen.
Excellent Comb Honey Producers

Leather Italians
FOR 1961 — BY AIR MAIL

		After June 1st
1-25	$1.25	$ .85
26 up	1.00	.75
Select tested	$3.00	
Approved breeders,	5.00	

Limited numbers of pkgs. express collect
2 lbs. with queen $4.00
3 lbs. with queen 5.00
50 pkgs. up deduct 25¢ per pkg.
Clipped & Marked Free if desired
We are prepared to make prompt shipment on your unexpected requirements.

O. K. Anderson & Son
Box 66
Coffee Springs, Alabama, U.S.A.

ITALIAN ..... "GULF BREEZE" ..... QUEENS

We are producing at full capacity and have thousands of queens at this writing to fill orders.

We ask you to compare "GULF BREEZE" queens with any offered and be convinced that you have high quality for production.

Prices: 1-9...$1.30 10-49...$1.25 50 up...$1.20 each
After May 15 deduct 20¢ per queen.
Clip 5¢ and Mark 5¢ extra.

Bessonet Bee Co. Donaldsonville, La.

Three Band and Pure Italian Hybrid Package Bees and Queens
We ship pure worker bees by mail, express, or truck. We guarantee live arrival.

1961 PRICES

Each with a young laying queen		2 lb.	3 lb.	4 lb.	5 lb.
1 to 11	Each	$4.25	$5.35	$6.45	$7.55
12 to 29	Each	4.05	5.10	6.15	7.20
30 or More	Each	3.85	4.85	5.85	6.80

	1 to 11	12 to 29	30 or more
Untested Queens	$1.40	$1.30	$1.20

Tested Queens, $2.00 each.
For Booster Bees, deduct the price of the queen in quantities.
ROYAL JELLY ..... $10.00 Per Ounce

P. O. Box 265 JACKSON APIARIES Funston, Georgia

1961 PACKAGES BEES AND QUEENS 1961
The South's Finest — **IMPROVED 3-BANDED ITALIANS** — Dependable Service
DIRECT FROM OUR YARD TO YOU

Mr. Beekeeper, the foundation of our business is to furnish you with good stock, good weight, young bees, prompt shipment, state health certificate, safe arrival in U.S.A. and Canada.

PRICES

2-lb. pkg. with queen	$3.75 ea.
3-lb. pkg. with queen	4.75 ea.
4-lb. pkg. with queen	5.75 ea.
Untested queen	1.00 ea.
Tested queen	2.00 ea.

NORMAN BROS. APIARIES RAMER, ALA. Ph. JO-26846

1961 ITALIAN PACKAGE BEES AND QUEENS

We give 4% extra Queens	1-9	10-49	50 & up
2-lb. Pkg. Bees & 1 Queen	$5.10	$4.60	$4.20
3-lb. Pkg. Bees & 1 Queen	6.30	5.70	5.30
Additional Queens in packages, $1.20 each			
April QUEENS, each	2.00	1.50	1.40
May & June QUEENS	1.50	1.15	1.10

Above prices are F.O.B. Sacramento, Calif. parcel post or express. **********
Write for information on will call truck orders.

John S. Shackelford Rio Oso, Calif.

IT'S A HONEY

(Continued from page 291)

ter, 2 teaspoons cinnamon, and ½ cup raisins.

Mix honey, nutmeats, butter, cinnamon and raisins thoroughly. Spread in a greased 8-inch pan.

Coffee Cake: Two eggs, beaten, ½ cup sugar, ⅓ cup honey, 1 cup milk, 2 cups pancake ready-mix, ¼ teaspoon soda, and ⅓ cup melted shortening.

Gradually add sugar to beaten eggs, beating until fluffy; add honey gradually. Add soda to ready-mix, sift, then add milk alternately with pancake mix, mixing lightly until combined. Fold in melted shortening. Pour over the honey topping. Bake in moderate oven, 350°F. 40 to 45 minutes.

Honey Coffe Cake

Two-thirds cup honey, ¼ cup soft shortening, 1 egg, ⅓ cup milk, 1½ cups sifted flour, 2 teaspoons baking powder, ½ teaspoon soda and ½ teaspoon salt.

Cream honey and shortening together, add beaten egg and mix thoroughly. Stir in milk. Sift dry ingredients together, then stir into honey mixture. Spread batter in greased and floured 9" square pan. Sprinkle with topping and bake 25 to 35 minutes in moderately quick oven, 375°F. Toothpick inserted in center should come out clean.

Topping: Blend ½ cup brown sugar, packed and 1½ teaspoons cinnamon.

Honey Pineapple Coffee Cake

Follow the above recipe except for topping. Then spread with Honey Pineapple Topping. Blend: Two tablespoons honey, 2 tablespoons softened butter and ½ cup drained crushed pineapple.

LIVE AND LEARN

(Continued from page 288)

packages for this year. I can't install them on combs of pollen because I don't have any. Until natural pollen is available, these packages are going to have to use the soy flour or wait until pollen is available in the fields. If they don't take it, I'll try the pollen cakes inside the hives, which also is one of the things that seem to work for other beekeepers, but not for me.

QUEENS

$1.00 each

Any Number
By Air Mail

Bright 3-Band Italian Bees and queens of highest quality. Purely mated. Full weight packages. Safe arrival and satisfaction. State health certificate furnished.

2 lb. pkgs. w/q 3.75
3 lb. pkgs. w/q 4.75
4 lb. pkgs. w/q 5.75

Packages shipped F.O.B. express or via parcel post, postage collect.

JOHN A. NORMAN
Route 1 Grady, Ala.

HOLDER APIARIES
Leroy, Alabama
Phone: CHestnut 6-2769
In the mild climate of the deep South.
Plenty of
Italian Queens & Package Bees
MAY 8th AND AFTER
Queens .....$ .75 any amount
2 lb. pkgs. w/qs 3.25 any amount
3 lb. pkgs. w/qs 3.85 any amount
Please give our 37 years of experience a trial.
Large enough to accomodate, small enough to appreciate.

TEXAS CAUCASIAN QUEENS AND PACKAGES

BOOKING ORDERS FOR 1961	1-24	25-99	100 up
2 lb. pkg. w/q	$4.50	$4.25	$4.00
3 lb. pkg. w/q	5.60	5.30	5.00
Queens	1.45	1.35	1.25

All queens personally produced by J. E. Hastings and his breeding stock bred for non swarming, very gentle, good honey producers.
10% books your order, balance two weeks prior to shipping. Health certificate, weight and live arrival guaranteed. Five cents extra for marking or clipping.

KANES APIARIES
Rt. 1, Ph: SW 8-3039 Hallettsville, Texas

NORMAN'S
Improved 3-Band
ITALIAN BEES & QUEENS
From top honey producing hives.
2 lb. pkg. w/q $3.75
3 lb. pkg. w/q 4.75
4 lb. pkg. w/q 5.75
Queens 1.00
Full weight, safe arrival guaranteed, with health certificate furnished. 10% books your order.
NORMAN BEE CO.
Route 1 Ramer, Ala.

Beeswax Rendering Service
Exchange Your Beeswax
for Foundation
Write for Price List.
WAX WORKERS, INC.
1330 Slaterville Rd. Ithaca, N. Y.

QUALITY BRED QUEENS
Italians and Caucasians
CAUCASIAN BREEDERS furnished by J. E. HASTINGS
Queens, $1.40 each Air Mail & Clipped
ITALIAN QUEENS: Breeders selected from OUR NORTHERN APIARIES for hardiness and honey production.
1-24 ..... $1.40 each
24-99 ..... 1.30 each
100-499 ..... 1.25 each
ITALIAN QUEENS AFTER JUNE 1st
75¢ each or $65.00 per 100
All queens marked 10¢ extra, clipping free.
Watch for our summer queen yard address.
Walter D. Leverette Apiaries
P.O. Box 364 Ft. Pierce, Fla.

NIGHT RAIDERS

(Continued from page 271)

out of them, then taught its children to do likewise.

Oh sure! Some kibitzer will declare that the water I drank was hard, and I will concede that it was; but not hard enough to cause me to see snakes. Nevertheless, the bees, thereafter, let me till my garden in peace.

A LOOK AT PACKAGE-BEE PRODUCTION

(Continued from page 275)

value of the bees that can be produced.

When located in good honey-producing regions, certain yards less accessible by truck or further from the shipping point might be shaken lightly early in the shipping season and allowed to develop the populations necessary for honey production. The stimulatory feeding methods recommended for package-bee production are equally efficient for honey-producing colonies, but ample hive equipment must be available to prevent swarming of the populous colonies. It would appear to be economically sound to provide the equipment necessary for full honey production. If demand for package bees is high, all colonies could be turned to that use, but the shipper would be prepared for a honey crop if the demand for packages is low.

PACKAGE BEES ITALIAN QUEENS
Good Producers — Gentle
You will like them. Good service.
A. R. BANTA Los Molinos, Calif.

QUALITY IN PACKAGE BEES AND QUEENS
Caucasian or Italian, gentle, highly productive. Health certificate, live arrival guaranteed.

Lots of	Queens	2 lb. w/q	3 lb. w/q	4 lb. w/q	5 lb. w/q
1 to 25	$1.50	$4.25	$5.35	$6.45	$7.55
26 to 99	1.35	4.00	5.05	6.10	7.15
100 up	1.20	3.75	4.75	5.75	6.75

FARRIS HOMAN SHANNON, MISS.

When you think of
Bees & Queens

Think of:
Merrill Bee Co.

P. O. Box 115
State Line, Miss.

With normal weather all orders should go out on time as our bees are in good condition.

Our 100% satisfaction has been good for 49 years, let us prove it.

Packages with Queens (Italian only)

2-lb. pkg.	**$3.75 any number**
3-lb. pkg.	**4.75 any number**
Untested Queens	**1.10 any number**
Tested Queens	**1.50 any number**
For larger pkgs. add	**1.00 per lb.**

Terms $1.00 per package with orders balance before shipments.

ITALIAN QUEENS — **PACKAGE BEES**

	1-24	25-99	100-up
2-lb. pkg. with queen	$4.25	$4.00	$3.75
3-lb. pkg. with queen	5.25	5.00	4.75
4-lb. pkg. with queen	6.25	6.00	5.75
Queens	1.25	1.20	1.15

Tested Queens, $2.50 **Untested Queens, $1.00 after May 15th**

SUNRISE APIARIES **Box 573** **PETAL, MISSISSIPPI**

PACKAGE BEES "ITALIANS" QUEENS

Never before have good packages and queens been so important. Serving those who demand the best.

	1-9	10-49	50 up
2 lb. pkg. with young laying queen	$4.75	$4.50	$4.25
3 lb. pkg. with young laying queen	5.75	5.50	5.25
4 lb. pkg. with young laying queen	6.75	6.50	6.25
Extra Queens	1.50	1.40	1.30

Shipments by Express, Parcel Post or your Truck.
Quality Does Not Cost — It Pays

THE WILBANKS APIARIES **CLAXTON, GEORGIA**

York's Quality Bred Bees and Queens

1961

Starlines Midnites Italians

Pkgs. with Starline or Midnite Qns.

Quantity	1-24	25-99	100 up
2 lb.	$5.00	$4.75	$4.50
3 lb.	6.25	6.00	5.75
4 lb.	7.50	7.25	7.00
5 lb.	8.60	8.35	8.10
Extra Queens—Starline or Midnite	$1.80	$1.70	$1.60

Packages with Italian Queens

Quantity	1-24	25-99	100 up
2 lb.	$4.70	$4.45	$4.20
3 lb.	5.95	5.70	5.45
4 lb.	7.20	6.95	6.70
5 lb.	8.30	8.05	7.75
Extra Queens—Italians	$1.50	$1.40	$1.30

QUEENLESS packages. – deduct $1.00 per package.
TESTED QUEENS – add $1.00 per package or queen.
Queens, Clipped 10¢. Clip and Mark, 15¢ each additional.

TERMS: Small orders cash, larger orders $1.00 deposit per package and balance two weeks prior to shipping date. Shipments start first of April depending upon spring weather conditions.

WRITE FOR YOUR COPY OF PARCEL POST RATES

Help us to help you ..... ORDER TODAY!

YORK BEE COMPANY P.O. Box 300 JESUP, GEORGIA

(THE UNIVERSAL APIARIES) 412 W. Orange St. Ph. Garden 7-4131

When Answering Advertisements, Please Mention GLEANINGS IN BEE CULTURE

QUEENS

ITALIAN

NORTHERN TESTED STOCK

A Dependable Source of Good Early Queens

PRICE TO JUNE 1st

Singles	$1.50
2 to 9	1.35
10 to 25	1.25
25 to 100	1.20

QUANTITY DISCOUNT

A. J. BOETTGER

Route 1, Box 1070 Naples, Fla.

California Italian Queens

Extra Good Breeders

1 to 24 queens ....$1.20 each

25 or more ..... 1.10 each

DAN W. ALVIES

670 Roe Road Paradise, California

UNTESTED CAUCASIANS

If your present shipper can't ship

Try Mine $1.25

JIM DAVIS BEE FARM

NAVASOTA, TEXAS

TA 5-3941 P.O. Box 373

HARPER'S

FAMOUS HIGH QUALITY

ITALIAN QUEENS & BEES

	2-lb. w/q	3-lb. w/q	QUEENS
1-29	$4.35	$5.25	$1.35
30 & Up	4.10	5.00	1.20

Queens sent Prepaid Air Mail. Packages Express Collect or Parcel Post when prepaid by customer. Health certificate and live arrival guaranteed. **Please let us have your order early and help us to give you your desired shipping dates. Thanks!**

CARLUS T. HARPER

New Brockton, Ala.

BEEKEEPING ON THE GULF COAST

(Continued from page 268)

ments of foreign honey dumped on the New York buyers.

"While steamship lines are running vans over the country bringing in freight for them to haul, the railroads are not sitting idly by," he points out. "These piggy-back railroad cars are giving steamships some competition that will save money for honey producers."

Honey shipped to the East is all one grade. It finds its way into the products of bakers, candymakers, honey-syrup blends, and medicines. Some of it is bottled for certain markets.

What with queen rearing, honey production, bottling and blending, and shipping tons of honey in barrels to market, you'd think Hignite would have his time well taken up. But this is just a part of it. He is an accountant for a nearby refinery, working at this job from 4 a.m. to 12 noon.

Without all of these various activities he would likely be in the situation of the juggler who kept in the air 10 balls, six eggs, two water pitchers and four glasses. The juggler finally quit. He couldn't think of anything to do with his left hand.

WILLIAMS ITALIAN QUEENS
Unsurpassed By Any Stock
Certificate with each shipment
1-9 Air Mail .....$1.25 each
10-99 Air Mail ..... 1.15 each
100 Up Air Mail ..... 1.05 each
Clipped and Marked 10¢ each.
DR. WILLIAMS APIARIES
115 W. Sterling Ave. Baytown, Texas

CALIF. CAUCASIAN QUEENS
1 to 24, $1.50 25 to 99, $1.35
100 up, $1.25
DON J. STRACHAN
Rt. 2, Box 375 Phone Sh 2-3881
YUBA CITY, CALIF.

HUMPHREY BEE FARM
Caucasian Queens

		After May 20th	
1-24	$1.50	1-24	$ .90
25-99	1.40	25-50	.80
100 up ...	1.00	50 up	.70

Queens Clipped and Marked at no extra cost.

IT PAYS TO BUY McVAY'S QUEENS of QUALITY
ITALIANS ONLY
$1.40 Each, Airmail
OVER 25, $1.20 EACH
Also Package Bees
J. F. McVAY Jackson, Ala.

PACKAGE BEES AND QUEENS
Walker-Lee Co. Live Oak, Calif.

Better Bred Queens 3-Banded Italians
Yes, we have them at the right price, plenty of bees and queens. Be among our many satisfied customers. You can't buy better bees at any price. Prices after May 5th as follows:

2 lb. pkg. w/q	3 lb. pkg. w/q	Queens
$2.75	$3.75	$ .70

All orders are rush orders and will receive our prompt attention.
Calvert Apiaries Calvert, Alabama
Phone Valley 9-6183

"Old Reliable" **B E R R Y ' S** **Italian Bees**

THE PREFERRED STOCK OF LEADING HONEY PRODUCERS
Oldest Package Shipper South

America's Best Package Bees and Finest Queens. INSURE your honey crop with DEPENDABLE BERRY Bees (90% of our package bees are under 10 days old).

After 65 years of Select Breeding, we have settled on our strain of Italian bees as being unsurpassed by ANY stock, Hybrid or otherwise, in their relation to honey production, disease, and nosema resistance. We have bred repeatedly from MAJOR advertised strains, and abandoned them all as unequal to our "OLD RELIABLE" stock. "OLD RELIABLE" bees assure you that you have bought the best to be found, regardless of price. They are the Standard of the Beekeeping Profession, in leading honey producing areas. We maintain several branches in the Northwestern States that enable us to test our strain from both honey production and climatic standpoints. All this, along with Competent Breeding, assures you that when a better stock is produced, "OLD RELIABLE" will be the name.

PRICE LIST OF OUR QUEEN BEES AND PACKAGES OF BEES WITH YOUNG QUEENS

	Quantity	Queens	2-lb. w/q	3-lb. w/q	4-lb. w/q	5-lb. w/q
Prices through May 20th:	1-24	$1.50	$4.75	$6.00	$7.10	$8.35
	25-99	1.40	4.50	5.65	6.85	8.10
	100-up	1.30	4.25	5.40	6.60	7.85
Prices after May 20th:	1-24	$1.30	$4.00	$5.00	$6.00	$7.00
	25-99	1.20	3.75	4.75	5.75	6.75
	100-up	1.10	3.50	4.50	5.50	6.50

For prices on queenless packages, deduct $1.00 from price of package. All prices F.O.B. Montgomery, Ala.

Directions telling how to handle and a Certificate of Health accompany all shipments. May we book your order NOW? Deposit of $1.00 per package required for booking. Remainder remittance in full ten days before shipping date.
References: Union Bank & Trust Co., Montgomery, Ala. Any Bee Journal in the United States or Canada. Ask your Extension Agent about us.

M. C. BERRY & SONS
P. O. BOX 684 **MONTGOMERY, ALABAMA**

When Answering Advertisements, Please Mention GLEANINGS IN BEE CULTURE

Quality Bred **H O M A N ' S** **Caucasian or Italian**
Bees and Queens

2-lb. w/q	3-lb. w/q	4-lb. w/q	5-lb. w/q	Queens
$3.75	$4.75	$5.75	$6.75	$1.15
	PRICES AFTER MAY 20			
$3.00	$3.75	$4.50	$5.25	

Queens — 1-24 .....$ .85 25 & up .....$ .75
All queens postpaid airmail. Health certificate and live arrival guaranteed.
Ph. PO 7-3880 **HOLDER HOMAN** **Shannon, Miss.**

B E E S **Q U E E N S** — **Three-banded Italians**

	1-24	25-99	100-up
2-lb. pkg. with queen	$4.50	$4.25	$4.00
3-lb. pkg. with queen	5.70	5.45	5.20
Queens postpaid	1.45	1.35	1.25

Tested queens, $2.50
For larger packages add $1.20 per pound.
No charge to clip or Airmail queens. Add 10¢ to mark.
Packages F.O.B. Hattiesburg.
Deduct 20% after May 15th

W. E. PLANT **Rt. 2** **HATTIESBURG, MISS.**

Shoot for profit - - - - Shoot for the STAR

Order STARLINE queens this season and profit.

	QUEENS		PACKAGES WITH QUEENS		
	Starline	Italian	2 lb.	3 lb.	4 lb.
1-24	$1.75	$1.45	$4.75	$6.00	$7.00
25-99	1.65	1.35	4.50	5.75	6.75
100-Up	1.55	1.25	4.25	5.50	6.50

Packages with Starline queens, add 30¢ per package.
Clipping 5¢ each, marking 5¢ each.

Reg. U. S. Pat. Off.

GARON BEE CO. Donaldsonville, La.

JENSEN'S BETTER BRED QUEENS

DADANT STARLINE			JENSEN'S MAGNOLIA		
1-24	25-99	100-up	1-24	25-99	100-up
$1.75	$1.65	$1.55	$1.45	$1.35	$1.25

Air Mail Postage Paid on Queens. Clipped Free, Marked 10¢.
Summer Prices will begin June 1st

JENSEN'S APIARIES MACON, MISS.
PHONE: 170 J

Reg. U. S. Pat. Off.

GRAY CAUCASIANS

35 years with Caucasians, same location, fine breeding stock, and dependable service. Queens prepaid. Bees Via P.P. or Express.

Prices	Queens	2 lb. w/q	3 lb. w/q
1 to 49	$1.40	$4.50	$5.50
50 up	1.25	4.25	5.25

Select Tested Queens, $3.00 Breeders, $10.00
Queens marked and/or clipped free if weather is favorable.

BOLLING BEE CO. GREENVILLE, ALA.

DADANT STARLINES	QUEENS	ITALIANS
1-24	$1.20	$1.05
25-99	1.15	.85
100-up	1.05	.75

Prices from June 1st to Sept. 1st Add 10¢ for clipping and marking.

E. J. BORDELON APIARIES Phone 2583 Moreauville, La.

Caucasian Queens or Dadant's Midnites

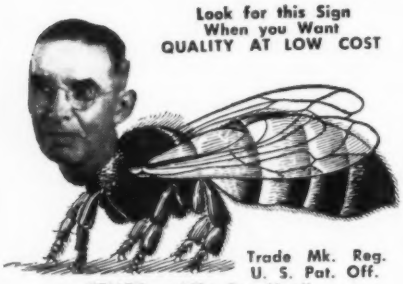
1-24	25-99	100 up	1-24	25-99	100 up
$1.45	$1.35	$1.25	$1.70	$1.60	$1.50

PACKAGE BEES WITH CAUCASIAN QUEENS

	1-24	25-99	100-up
2 lb.	$4.75	$4.50	$4.25
3 lb.	5.85	5.60	5.35

For packages with Dadant's Midnite Hybrid Queens add 25¢ to the above prices. For clipping and marking queens add 10¢ each.

Howard Weaver & Sons Navasota, Texas



KELLEY — "The Bee Man"

KELLEY'S BEES

Improved three-banded Italian bees and queens direct from our own farm. Shipments start April 1st, express or parcel post shipment. Thousands of extra queens.

	Queens	2-lb. w/q	3-lb. w/q
1-24	$1.25	$4.25	$5.25
25-99	1.20	4.00	5.00
100-up	1.15	3.75	4.75

THE WALTER T. KELLEY CO.

Clarkson, Ky.

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